the American Perfumer
and ESSENTIAL OIL REVIEW
COSMETICS · SOAPS · FLAVORS
EST. 1906
HARLAND J. WRIGHT, Editor and Publisher

ROBIN FOWLER
Managing Editor

MAISON G. deNAVARRE, PH.C., B.S.
Technical Editor

LOUISE M. SERRA
Assistant Managing Editor

WILLIAM LAMBERT
Business Manager

CONTENTS · APRIL 1945

Colloidal Sulfur Earns Its Place in Cosmetics
José Macias-Sarria 39

Natural Repellents in Rodent Control
Charles Sparhawk 41

Survey of Balsam Tolu and Oil of Balsam Tolu
Dr. Ernest Guenther 43

Cosmetic Trends in the Middle West
Jean Mowat 45

Terpene Alcohols
Dr. Arnold Beller 47

Short Adages
R. O'Mattick 48

Technical Abstracts from Scientific Literature 49

Packaging Portfolio 50

Survey of Recent Cosmetic Patents
Dr. I. J. Fellner 52

War Ups Sales of Synthetic Savors
J. N. Taylor 53

Theoretical Aspects of Soap Manufacture
A. Davidsohn 56

REGULAR FEATURES

Desiderata—*Maison G. deNavarre* 35

Questions and Answers 37

Washington Panorama 63

New Products and Processes 69

Among Our Friends 71

News and Events 75

Market Report 93

Prices in the New York Market 95

PRODUCTION CONTROL AND ANALYSIS OF COSMETICS
Chapter IV (con't) Physical and Chemical Testing
Gravimetric and Volumetric Methods 101

Published by ROBBINS PUBLISHING COMPANY, INC.

J. H. MOORE, *President* F. C. KENDALL, *Treasurer*

Publication Offices: 56th and Chestnut Streets, Philadelphia 39, Pa., U.S.A. Editorial and Executive Offices: 9 East 38th Street, New York 16. Telephone: CAledonia 5-9770; Cables: Robinpub, New York; Codes: ABC 5th Edition. NED BRYDONE-JACK, *Pacific Coast Representative*, 714 West Olympic Blvd., Los Angeles 15, Calif. Subscription rates: USA and possessions $3.00 one year; 30c per copy. Canada and foreign $4.00 one year. Volume Forty-seven; Number four.

(Copyright 1945, Robbins Publishing Company, Inc.)

Editorial Comment

Good Business Practice Is Internationally Effective

At a luncheon given recently in honor of Oscar Pando, Northam Warren Corp.'s South American general manager and vice-president, Mr. Warren emphasized a point which should be so obvious as to require no comment. Yet, strangely, firms without export experience seem to look on foreign markets as being strange and terrifying territories. The point Mr. Warren made is: If it works here, it will work almost anywhere. A sound business policy, proved in competition in this country, will be equally effective when applied in Peru, or in England.

Is Soap Limitation a Sign of Governmental Short-Sightedness?

The latest Governmental order on soap manufacture (WFO-42b) has the effect of limiting the manufacture of soap to 80 per cent of the 1940-41 base period. The question here propounded is whether this is not short sighted on the part of the government. The use of soap has grown considerably, especially in the urban sections, where workers are doing war work.

It is pretty generally agreed that soap is a most essential insurance against disease and epidemics. E. H. Little, of the Colgate-Palmolive-Peet Co., stated at the Soap and Glycerine Association meeting in January, "records show that a certain amount of soap is needed to control the spread of disease and epidemics," and "sickness and disease spread according to the per capita consumption of soap." More recently, John B. Gordon, secretary of the Bureau of Raw Materials for American Vegetable Oils and Fats Industries, pointed out that the government might be taking a risk in letting soap run short.

Granted that fats are short. But the amount used in the manufacture of soap is not so great as to risk an epidemic at a time when our hospitals are full, and when we haven't enough nurses and doctors to meet present demands.

ESCALOL 106

makes the sun safe for the skin

Escalol 106 has its roots in research work that we began during the first World War, when we were manufacturing certain products for the aeroplane division of the War Department. Our objective was a product that would protect the cellulose acetate tautening and protective agent used on the wings of the fighting planes against the destructive action of the ultraviolet spectrum in sunlight. After the war, in 1921, we did considerable work on a somewhat similar problem, the protection of textile dyes against sunlight. The results of our research were focussed eventually on the development of screening agents that would protect the human skin against sunburn.

★ ★ ★ ★

Escalol 106 forms a flexible and invisible continuous film on the skin that does not crystallize as the solvent vehicle evaporates. The film makes the ultraviolet rays that cause sunburn innocuous to the skin. However, it does not impede the transmission of the rays that cause tanning. It has a high degree of resistance to water and perspiration as well as abrasion. It maintains its potency over long periods of exposure to sunlight, thus giving preparations in which Escalol 106 is used a safety factor that makes them fool-proof: they give adequate protection even when users fail to reapply them as frequently as the directions on the label of the package suggest.

The sunscreening values of Escalol 106 exceed substantially those specified by the Quartermaster Corps for sunburn preventive preparations for use by the Army. These high values, which were demonstrated in field tests conducted by the Army on snow and ice slopes, where direct and reflected radiation makes unusually severe demands on sunscreens, led to the adoption of sunburn preventive preparations containing Escalol 106 by the Army. They are reflected by the experience of leading cosmetic and pharmaceutical manufacturers who are marketing preparations containing Escalol 106 and who have found them to give unvarying satisfaction to the user.

Escalol 106 is effective in small concentrations, thus making it economical to use and also eliminating the possibility of physiological disturbances that are apt to follow when sunscreens are used in large concentrations. It is non-toxic and non-irritating.

★ ★ ★ ★

Samples of Escalol 106, together with complete technical data and suggested formulations for various types of sunburn preventive preparations, will gladly be sent upon request.

VAN DYK & COMPANY
INCORPORATED 1904
Manufacturers of Perfumery and Cosmetic Raw Materials Since 1901
OFFICES, FACTORY AND LABORATORIES:
MAIN AND WILLIAM STREETS, BELLEVILLE 9, NEW JERSEY
WESTERN OFFICE: 1282 SUNSET BOULEVARD, LOS ANGELES

Desiderata

by MAISON G. DeNAVARRE

M. G. DeNavarre at work in his laboratory

IT has been the custom to use glycerine in compounding antiperspirant and deodorant creams. This usually results in the cream having a sticky feeling on application. If most or all of the glycerine be replaced by propylene glycol, the resulting cream applies with a dry feel. The softness and freshness of the cream are in no way affected since the hydroscopicity curve for both are practically the same.

ANTIPERSPIRANTS

In this line, I've just tried out a new greaseless base for antiperspirant and deodorant creams. Its use reduces costs considerably, at the same time making a very fine appearing cream—glossy and rich in texture. When the cream is made with propylene glycol, it rubs in easily leaving a nice dry feel.

There is also a new buffer recently patented by a large chemical house. It is hoped the material will soon be available for testing. Many materials act as buffers to the acidity of aluminum chloride or sulfate, but most result in an inactive preparation. The trick is to buffer and retain antiperspirant properties.

IRISH MOSS MUCILAGE

Some of the oldest sources of gums and mucilage are the weeds of the oceans. Irish moss is one of these. While the mucilage is extracted from the dried weed in actual fact, today one can buy a finely powdered product that is nothing more or less than pure gum, previously extracted from weed, dried and powdered. This highly concentrated material makes it an easy job to handle Irish moss.

The drying time of Irish moss mucilage is better than that of most gums, including quince seed. Can't you imagine a few uses for this advantage alone? It has essentially the same compatibilities as other gums. The mucilage is most readily formed from the powdered concentrate by mixing with cold water and heating to about 150° F. A clear solution with no lumpiness forms at this temperature. The viscosity is dependent on the concentration, naturally. The resulting mucilage is of a light straw color that is easy to tint. As is the case with all gum mucilages, a preservative is needed. Methyl para Hydroxybenzoate 1:750 is a good preservative and can be incorporated while the mixture is being heated.

HOT WAVE—COLD WAVE

Now the cold wave is getting warmer. Boy, there is no substitute for heat when it comes to waving hair. Ask the man who waves hair. It affords better control.

The real objection to the cold wave as we all know it, is the abuse that may creep in, or the inexperience of the operator, coupled with a strong reducing agent. The wave is actually produced during the neutralization or oxidation process, and often methinks, this process is not properly executed.

Anyone knowing the ease with which one can train beauty operators to do a new operation such as a "cold wave" knows it is almost like giving a child a knife to play with. By using a strong reducing agent like a thioglycollate, it is like actually sharpening the knife.

Speaking of thioglycollates, a sample of one recently tried at 6½ per cent, buffered, is one of the best seen so far. It has a better odor, good color and produces superb results; it is priced within reason, too.

Wonder what the next thing in waving will be? The best line of research is away from primary irritants, preferably at an alkaline pH.

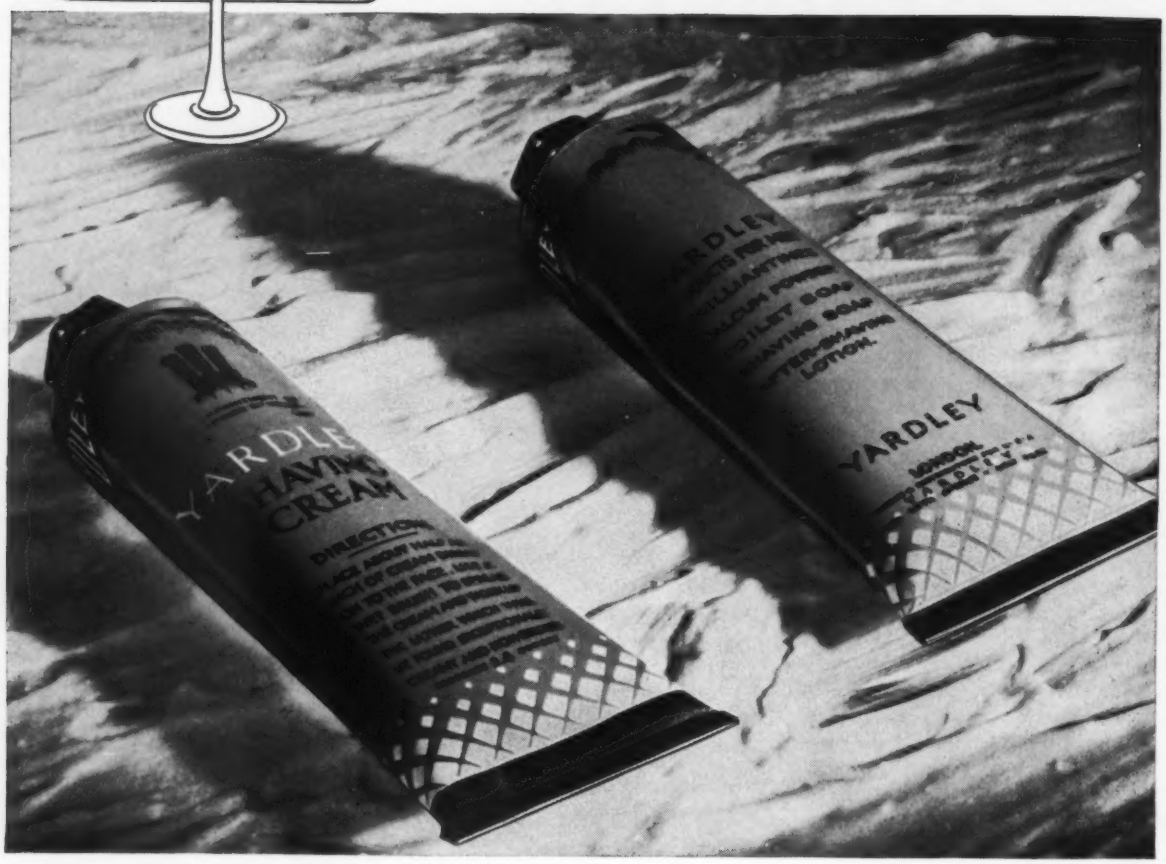
LIQUID MAKE-UP

Oily liquid make-up, consisting of an oil suspension of colored pigments, has enjoyed considerable sale. The trick is to get a thin product in spite of the high concentration of pigments. In other words, the product must contain a pour point depressant. One such product is mentioned in a British patent application as being a polyglycerol stearate. This is not a regular article of commerce. But one might take a page or two out of the chocolate makers' book of knowledge and make it apply here. Chocolate is a suspension of inert matter in a vegetable oil. A number of things have been used to make chocolate flow more readily, among them being triethanolamine and lecithin.

So much for the flowing properties. To get the proper degree of coverage one should use about 15-20 parts of titanium dioxide, part of which may be replaced by zinc oxide. One of the best oils to use is sesame oil, but being a scarce article of commerce, apricot kernel oil or corn oil may be used. The latter would have an advantage from the dermatologic standpoint. Of course, it should be preserved with an antioxidant such as propylgallate. Traces of lanolin are not amiss. The pigments should be tinted with color

RESERVED

FOR THOSE WHO WANT THE STURDIEST COLLAPSIBLE TUBES MONEY CAN BUY



Sheffalloy
TRADE MARK REGISTERED
SHEFFIELD PROCESS
TUBES

YOU know that you are not easy on your shaving cream and tooth paste tubes. You squeeze, and bend, and fold them over again and again. It takes a mighty sturdy, flexible tube to stand up under such a mauling. Follow the example of Yardley—check up on Sheffield Process Tubes . . . the tubes that have extra strength built into them because of our exclusive process of mixing, melting and "tempering" the metal. For almost 100 years we've been making tough Collapsible Tubes for both the largest and smallest of our country's users. Take advantage of our experience. Consult with us now on your future requirements.

NEW ENGLAND COLLAPSIBLE TUBE CO.

3132 S. CANAL STREET, CHICAGO 16 • NEW LONDON, CONN. • W. K. SHEFFIELD, V. P., 500 FIFTH AVENUE, NEW YORK 18
THE WILCO COMPANY, 6800 McKINLEY AVE., LOS ANGELES 1

lakes. Here is an important point to remember, namely, such a mixture is most difficult to perfume. Of the scores of compounds tested so far, I have found only one that seems to develop properly.

In compounding the product, it is advisable to grind the pigments and colors together with a small amount of the oil. Then disperse this in the balance of the oil containing the other ingredients. Naturally, the covering power will vary with the shade desired. A little talc is readily worked in to maintain the height of the pigment layer on settling.

SOLUBILIZERS VS. ALCOHOL

Using a good perfume or flavor oil solubilizer, it takes from 3-5 times as much solubilizer as essential oil or perfume to have the mixture go into clear solution. Alcohol of 95 per cent strength dissolves most perfume and flavor ingredients. But, as the alcoholic concentration is reduced, the solubility is reduced. Not so using solubilizers. Once the mixture is solubilized, it stays in solution regardless of dilution. Now only a fool would drop a solubilizer completely even though all the alcohol you want may be available. The smart man would combine the two for best results. Think of the opportunities in cheap perfume and toilet water for example—especially for export to tropical climates where alcohol alone evaporates from the bottles too quickly. There IS food for thought!

FATS SITUATION

If you are a user of any fats, you had better indulge in a fat conservation program—but quickly. See the Replacements Bulletin for the names of stretchers, substitutes, etc.

QUESTIONS AND ANSWERS

541. WICK TYPE AIR DEODORANT

Q: *We have been playing around with a wick type air deodorant; 40 per cent formaldehyde cannot be masked with water soluble perfume oil except at high cost. The average housewife is interested only in a nice odor over and above the foul odor she is trying to overcome. We have the following formula (formula given) on which we would like to have your opinion. Do you know of a source of supply of cotton wicks?*

C. P.—Maryland

A: It is difficult to mask the odor of formaldehyde with perfume alone, unless the product is overloaded with perfume. No doubt an aqueous preparation is not volatile enough for a wick deodorant and therefore the inclusion of alcohol is desirable. Regarding your formula, this does not seem to be out of line, unless you are using something other than the 40 per cent solution of formaldehyde, commonly found in commerce. Incidentally, this percentage might be lowered a little for satisfactory performance. We do not know of a source of cotton wicks, but have suggested, under separate cover, how you might get the information from another source.

542. TAR SHAMPOO

Q: *We are interested in a formula for manufacturing tar shampoo. Give us any information you can.*

T. Y.—Georgia

A: A tar shampoo can be made by adding pine tar to an ordinary shampoo in any quantity desired, usually not exceeding 5%. If you do not have a formula for a shampoo, we will be glad to send you one.

543. SOURCE OF RICINOLEIC ACID

Q: *We would like to add an ingredient to our sulfonated oil shampoo containing a wetting agent that would overcome the tendency to form dandruff. Please suggest the amount to use and the source of supply. We would also like to find a source of ricinoleic acid. Enclosed is a self-addressed envelope.*

A. W.—Illinois

A: The inclusion of a small amount of mineral oil or other fixed oil, is supposed to be of value in overcoming dryness. A maximum of 4 per cent of oil is recommended. A source of supply of ricinoleic acid is sent to you under separate cover.

544. RESORCIN IN SKIN TREATMENT

Q: *As a subscriber, I would like to ask if the use of resorcin in a skin lotion for acne and other skin ailments would be toxic or irritating. Would an irritation result if some of it got into the eyes? Do you know anything about Eurosol?*

E. R.—Indiana

A: There is a natural predisposition to every substance in use today. Resorcinol is no exception. Resorcinol is mentioned as an ingredient in the treatment of skin affections, but it is generally recognized to be a rather intense stimulant, but of the three isomers, it is apparently the least toxic. It is equally as strong an antiseptic as carbolic acid, is somewhat less poisonous and less irritating. It is thought to be irritating under certain conditions of application to the skin. Obviously, if some got into the eye, it would also irritate and set up an inflammation. The monoacetate sold under the trade name you mention has been used largely in scalp lotions in place of resorcin since the latter tends to discolor gray hair while the former has less of this fault. Whether a compound is toxic or not, depends upon how much is used, how it is used as well as the other ingredients in the formulation.

545. ADHESIVE FOR FALSE EYELASHES

Q: *We are interested in a formula for a mucilage or adhesive for sticking on false eyelashes. It should be non-injurious, fast drying and waterproof.*

M. M.—Mexico

A: The only thing that we can think of that might answer your purpose would be spirit gum or tincture of benzoin. Both of these compounds require volatile solvent to be removed. You might also try a solution of ethyl cellulose in a volatile solvent.

FIFTY YEARS a Leader

For more than fifty years the name of Chuit, Naef has been synonymous with the production of the highest quality group of synthetic and aromatic chemicals obtainable. Today, as then, this reputation continues unmatched. ✓ ✓ Throughout these years the Chuit, Naef organization has expanded its products to the point where they now rank as the most complete line of perfume raw materials available to the toilet goods, perfume extract and soap fields. ✓ ✓ As sole United States agents, let us convince you of the remarkable adaptability of our products to your line — *and our ability to deliver!*

Firmenich + Co.

135 FIFTH AVENUE, NEW YORK, N. Y.
CHICAGO OFFICE: 612 N. MICHIGAN AVENUE

FIRMENICH

Colloidal Sulfur Earns Its Place in Cosmetics

The use of sulfur for the treatment of skin diseases dates back to ancient Egypt . . . Outstanding dermatologists point out its leading role in fighting skin abnormalities

by JOSÉ MACIAS-SARRIA, PH.G., B.S.

DURING the years following the Vitamin era, we have three items which stand out for their claims. The first is the hormone and related bodies; we know little of their value, whether it be beneficial or otherwise. These products are now undergoing a test and we shall know of the results in the next few years. The second item is of safe use but possesses a most unpleasant odor, this being cod liver oil. Its beneficial value tested in damaged skin of guinea pigs is so handicapped because of its disgusting odor that almost nothing is done to further it as a useful ingredient of cosmetic ointments. Finally, I mention the third item of importance now used in therapeutic cosmetics, which is the subject of this article, colloidal sulfur. I intend to review this item and comment upon its significance in cosmetics.

The use of sulfur for the treatment of skin diseases goes way back to the earlier days of civilization in ancient Egypt. Its importance has never decreased.

Powdered sulfur, as sulfur was known to the world before this time, is insoluble in water, nearly insoluble in alcohol and sparingly soluble in oils. This curtails its efficacy. Its particles are coarse, gritty to the touch and visible to the naked eye. New advances have made possible the presenting of sulfur in colloidal form. It is true that colloidal sulfur appeared as a chemical curiosity many years ago. It was studied by *Debus* in 1888, and more extensively by *Oden* in 1911, but its therapeutical use is of quite recent development.

Colloidal chemistry now offers a means of producing matter in a state of subdivision close to molecular size. The colloidal particles are so small that they penetrate into the skin grooves and come into intimate contact with the epidermis. Besides this size feature in a given dose, the surface area in the colloidal form is about 1000 times that of the crystalline form.

NATURAL ELEMENT OF THE SKIN

We know that sulfur is one of the most important elements of the skin. The dried epidermis of the sole of the foot contains up to .53 per cent of sulfur. Sulfur is the most important element of the amino acids, cystine and cystein. Cystine, containing up to 14 per cent of sulfur, is the most important constituent of keratin (name applied to all horny layers of the skin, including nails and hair). In the constant process of keratinization of the skin, sulfur plays an important role. Besides the sulfur combined as cystine, during the process of cornification, there is a certain amount of loosely bound sulfur, in the form of hydrogen sulfide.

Unna experimentally demonstrated the presence of hydrogen sulfide by adding lead acetate solution to microscopic sections of the sole, whereupon black lead sulfide appeared. The significance of these reductions (hydrogen sulfide) and oxidations (pentathionic acid, etc.) of organic sulfur compounds, has been the subject of many contradictory theories. Without discussing the reactions which ordinarily take place, we point out that some authorities believe that hydrogen sulfide from cystine reduction acts as a keratoplastic (skin building) agent.

SULFUR EXTERNALLY APPLIED

Hydrogen sulfide is universally recognized as a keratolytic (skin dissolving) agent, and most of commercial depilatories owe their value to this property of hydrogen sulfide. *Zunz*, believes that this same property of hydrogen sulfide is responsible for the success of sulfur in the treatment of scabies and acne, because it acts as a bactericidal agent.

In cases where there is only a small amount of hydrogen sulfide formed, it acts as a keratoplastic agent. On healthy skins, sulfur externally applied, according to *Golodetz*, does not act as keratoplastic, because sulfur doesn't produce any noticeable hydrogen sulfide on healthy skins since the latter is slightly acid. He proved that hydrogen sulfide is formed by applying an ointment with sulfur and lead over both healthy and diseased skin.

On diseased skins the crust was blackened in proportion to the severity of the lesion. The blackening disappeared on recovery. The healthy skins were not blackened.

SKIN ABSORPTION OF SUBSTANCES

Contrary to old theories, the epidermis doesn't absorb water, but only volatile substances and fats in a selective way. Hydrogen sulfide, being a gas, comes into the range of absorbable substances. Experiments on the absorption of hydrogen sulfide, have been carried out by *Maliva* and others. He injected bismuth subcutaneously in mice, which became blackened after a sulfur bath. To avoid the argument of the possible absorption of hydrogen sulfide through the lungs of the mice, due precautions were taken. Even so the bismuth deposit became blackened.

SULFUR IN DERMATOLOGY

Unna, Heftles, McCallan, Wilcoxon, Marsh, etc., believe that the fungicidal action of sulfur is due to hydrogen sulfide. *Young, Williams, Liming*, etc., in their work with fungi found that those colloidal sulfur solutions rich in pentathionic acid were the most effective; they concluded that this product of the oxidation of sulfur was responsible for the fungicidal power of sulfur. Other authorities like *Muth*, believe that the bombarding of negative electrons emanating from sulfur under the influence of light, are the cause of its activity.

In attacking pathological conditions, sulfur seems to play two important roles. It supplies hydrogen sulfide, which apparently is an important factor in keratinization; secondly, and most important, it acts as an antiparasitic. Thus sulfur appears to be specific in the treatment of soborrheic dermatitis, psoriasis, pityrisis, rosea and other such conditions. Dandruff is the popular name for the fine exfoliation that occurs in soborrhea sicca of the scalp. Of the many local remedies for soborrhea of the scalp, not one is more useful than sulfur. *Zunz* attributes the value of sulfur in scabies and acne to the keratolytic properties of hydrogen sulfide. . The action of sulfur is enhanced by combining it with alkalis, since alkalis quickly reduce it to hydrogen sulfide. *Paschkis* explains that this is the reason why sulfur is irritating in acute vesicular dermatitis, where alkaline secretion exist. He also believes that the ineffectiveness of sulfur alone in psoriasis and parapsoriasis is due to the acid reaction of the scales of these infections: this acid medium is not conducive to the reduction of sulfur to hydrogen sulfide. These cases respond better to internal administrations of sulfur by subcutaneous injections.

External applications of sulfur have been reported successful in pyodermas, furuncles, carbuncles, impetigo contagiosa. Some dermatologists working in this field believe that hydrogen sulfide is effective here by absorbing the oxygen necessary for bacteria life. *Sabouraud* recommends sulfur in affections of the follicles or localized around the hair follicles and *Norman Walker* indorses it for *erythema multiforme. Hardaway* recommends it in *dystrophies of the nails; Paschkis* in *ichthyosis and pigmentary diseases. Shoemaker* obtained good results in psoriasis and pediculosis. *Trimble* and *Combes* report excellent results in *sycosis vulgaris. Crooker* was successful in treating and *localizing hyperidrosis. Pautrier* reports striking results in the treatment of alopecia and psoriasis with intramuscular injections of sulfur.

The use of sulfur soaps are advocated by *Nolan* for the treatment of scabies. *Segall, Wolf* and others have used sulfur dusting (cosmetic) powder with effectiveness in acne, etc. Using a 5 per cent colloidal sulfur of the pentathionic acid type, *Miller* successfully treated acne vulgaris, soborrhea and soborrheic dermatitis, etc. Acute types of ringworm infections of the feet, with vesiculations over the soles gave way with a 2 to 5 per cent solution, which followed compresses of ½ per cent aluminum acetate.

CONCLUSION

1. Colloidal sulfur has greatly increased the efficiency of sulfur, since contact with the skin has increased a thousand times in comparison to powdered sulfurs. 2. In normal healthy skins with a pH of 5.5, sulfur remains inert, since sulfur is inert in acid media. In broken or damaged skins (as in acne, etc.) where sulfur comes in contact with alkaline medium of the blood and serum, and in accordance with the degree of alkalinity of this medium, sulfur is reduced to hydrogen sulfide and acts as a keratoplastic and fungicidal agent. Colloidal sulfur, incorporated in soaps, a very alkaline medium, would have a strong action, but the factor of time and a prolonged alkaline action on the skin must be considered. If colloidal sulfur is incorporated in face creams, the pH of these creams is of paramount importance. If such creams are neutral, the only value advocated could be that of a prophylactic nature on healthy skins.

REFERENCES

[1] Debus, H.—*Clinical Investigation of Wachenroder's Solution. J. Chem. Soc.* London **53,** 278, 1888.

[2] Oden, Sven—*Ztschr. f. Chem. u. Indust. d. Kolloide* **8,** 186, 1911.

[3] Unna, P. G.—*Monatsch, f. Prakt. Derm. Hamb.* **52,** 505, 1911.

[4] Golodetz, L.—*Med. Klin., Berl.* **7,** 1085, 1911.

[5] Zunz, E.—*Elements de pharmacodynamie special. Paris, Masson & Cie*, 1932, p. 915.

[6] Wilcoxon, Frank, & McCallan—*The Fungicidal Action of Sulphur. Phytopathelogy* **20,** 391, 1930.

[7] Young, H. C. & Williams, R. C.—*Pentathionic Acid, the Fungicidal Factor of Sulphur. Science* **67,** 19, 1928.

[8] Young, H. C. & Liming & O'Neal—*Toxicity of Sulphur to Spores of Sclerotina Cinera as Affected by the presence of Pentathionic and other Sulphur Acids. J. Agric. Research* **40,** 951, 1935.

[9] Miller, H. E.—*Colloidal Sulphur in Dermatology. Arch. Derm. & Syph.* **31,** 516, 1935.

[10] Combes, F.—*The Role of Sulphur in Dermatology.* Meeting Med. Soc. State N. Y. Buffalo, 1932.

[11] Ballard, R. T.—*Colloidal Sulphur Therapy. Kentucky Med. Jour.* p. 34, Jan. 1938.

[12] Nolan, R. A.—*Sulphur Soap*, etc., *Arch. Derm. & Syph.* **36,** 846, Oct. 1937 and *New Method of Treating Scabies. Mil. Surgeon* **82,** 52, Jan. 1938.

[13] Segall, I.—*Sulfoderm, Therapeutic and Cosmetic Sulphur Powder. Med. Klin.* **25,** 756, 1929.

[14] Hayhurst, E. R.—*Investigations of a Colloidal Sulphur: (Thylox) as a Hand Soap for Normal and Abnormal Skins*, read before the American Chemical Society, Div. Med. Chem. 11, Sept. 1930.

Natural Repellents in Rodent Control

What is the answer to this persistent enemy? . . . How skunks, hawks and owls repel rodents . . . Why farmers and others are discouraged from destroying these natural enemies

by CHARLES V. SPARHAWK

The Sparhawk Company, Sparkill, N. Y.

REPELLENT is a new word in the pest-control industry. When the term is mentioned people look inquiringly, and ask "what does it mean?" Extermination and control are understood, but it is not generally known that anything can drive rodents out and keep them away.

In considering repellents intelligently let us take one of them—skunks. Farmers' bulletins have recommended skunks for the protection of barns, corn-cribs and granaries. A family of these friendly creatures will repay many times over for their protection against farm-dogs or other annoyances which might make them leave.

The Farm Science Reporter, January 1941, in an article written by Wilfred B. Crabb, of the Agricultural Experimental Station of Iowa State College of Agriculture, states in *Civets as Rat Killers*, "it was during a study of the food habits of the spotted skunk that we discovered their value. Detailed analysis were made of 834 samples of feces, which represented every month of the year.

"In our investigation, domestic poultry appeared in less than 1.5 per cent of the fecal samples examined during the winter months, and not at all during the summer months.

"They are admirably adapted for the control of rats and mice. In the fall, winter and spring season, predations of rats and mice are most noticeable. A farmer recently told the writer of a commotion in front of his cow one night while milking. A rat scampered between the legs of the cow, and was followed closely by a civet in hot pursuit, who paid no attention to the human spectator. The rat ran up an upright, unbarked oak pole supporting the side of the barn, and at its top, he was seized by the skunk.

"In the course of our investigation another civet reared a family of five young under a piece of floor in one end of the chicken house. The civets ran in and out of the house, passing under the hens roosting only three feet from the floor, and sometimes past hens on the floor, without molesting them. That is a partial answer to the question, 'What about my chickens. Will any be left after the rats and mice are gone.'

"During the period of our study, there was a very heavy population of cottontail rabbits. A great many of these were shot by the farmers to protect fruit trees and shrubbery, and were left on the ground. These dead cottontails provided abundant food for the civets during much of the period, but even so 10 per cent of the food during the winter months were rats, while rats and mice together composed 40 per cent of their diet. Cottontail remains were found in 50 per cent of the fecal samples.

"Civets have been known many times to kill or drive out rats under circumstances where good cats have had little effect upon them. In several places we observed that a heavy population of rats during the summer and fall completely disappeared during the winter months when skunks were in residence. Whether the skunks killed *more than they drove away* is a question, but, nevertheless, they had a controlling influence on the rats."

David E. Lantz of the United States Department of Agriculture reports this: "In Kansas the writer once lived in a house with cellar openings outside. The dwelling had been unoccupied for a year, and during this time the cellar had been used for storing corn, with the result that the entire house had become infested with rats and mice. A short time after the writer occupied the house, it was noticed a prairie spotted skunk had taken up its quarters in the cellar and night combats with rats were often heard. The skunk was frequently seen, but it was carefully left unmolested. After a few weeks, the rats and mice had all been killed or driven away, and the skunk left the premises."

FERRETS VALUABLE CONTROL

Ferrets were employed for years, when buildings were frame, and it was possible to get behind their walls and partitions, without endangering the safety of the animals from electric wiring, modern plumbing pipes and other obstructions. There was always the danger of the ferret getting away and losing itself, or of catching a rat and then eating and going to sleep beside its prey. While there have been no legal restrictions, the employment of ferrets is uncertain, and generally requires the assistance of dogs and men with clubs, to destroy the vermin when they emerge from their hiding places, chased by the ferret.

Modern Science for October quotes the following news item: "Rats, deadly sabateurs of wood, textile and paper products are checkmated at White Motor's Cleveland Plant by a posse of five ferrets, weasel-like creatures known chiefly for rabbit hunting. They live in cages right in the plant, and are released at night to

From an address given before the National Pest Control Association meeting, which was held at the Hotel Sherman, Chicago, Ill., October 23 to 25.

trail rats through partitions, under floors, and into shipping crates. Imported only after modern rodent extermination methods failed, weasel's score has been 40 to 50 dead rats a week."

Cats need no comment, except they are usually better mousers than ratters. Dogs of the terrier type are very effective hunters of rats and do fine work, if trained and handled by experienced exterminators. They can outrun a rat, and by their quickness, seize the rat by the back of the head, and shake and break their necks.

Barn owls and common chicken hawks are valuable controls. In a book called *Rats*, written by A. Moore Hogarth, there is quoted the following figures on one night's work by a pair of owls. "At 10 a.m. the nest contained 19 young rats, 27 mice, 42 field mice, 2 sparrows, a total of 90. They were all consumed by 7 o'clock the following morning, being eaten by 11 young owls." Realizing the enormous fertility and rapid reproduction abilities of rats, one must take into account the type enemy we are attacking. John Eric Hill, in *Natural History* magazine, published by the American Museum of Natural History, gives these interesting highlights on rodents: "To many animals water is a barrier hard to pass, even a large river may form a boundary beyond which certain species do not go. The Macassar Strait, between Borneo and Celebes was once only 25 miles wide, but many of the mammals found in Borneo have never been able to cross this water barrier. East of the strait we do not find bears, dogs, cats, members of the weasel family, most hoofed animals, true apes, and others, although some of these swim well. On the other hand, squirrels, rats and a few other types did get across in spite of the fact they swim poorly and would be quite attractive to any large fish they might meet. Various kinds of rats have, in the course of thousands of years, crossed wide stretches of ocean, traveling on natural rafts.

Such rafts are frequently seen in the tropics. Large rivers in the rainy season often undercut their banks. Great trees and tangled masses of vegetation fall into the river and are carried along, sometimes jamming into other trees, and forming floating islands. Small mammals and other animals that have been living in the trees are sometimes carried out to sea with them, or animals that are swept away by the flood may climb aboard. Natural islands so large they are taken for islands have been reported, floating miles from shore.

A voyage which may have been the longest ever achieved by a mammal was made by some small South or Central American rats. They were carried as far as the Galapagos Islands, more than 500 miles from the nearest point on the mainland.

What then is the answer to such a persistent enemy? Traps and poisons are being employed advantageously and efficiently. Farmers, and others, should be discouraged from destroying skunks, hawks and owls, which are important natural enemies and repellents of rodents. Modern apartment buildings and the large community housings do not permit cats and dogs in each family house, as was possible in the individual houses and separate buildings that less congestion encouraged. If cats and ferrets are not practical in large cities, how can the hordes of over-active invaders be caught and controlled?

One suggestion is Petra, the cultured extract from the skunk. This odor in its natural state is all-powerful, penetrating and permanent. It has been demonstrated that skunks and rats are enemies like the hawk, owl, cat and ferret. In dilutions that rodents can detect, Petra is odorless to human noses, which are said to function at lower than 10 per cent of the efficiency shown by dogs, foxes and other wild animals. Through this means the rodents recognize and react to their enemy. Even a kitten arches its back and raises its fur and hisses at the approach of a dog, regardless of the fact that it has never been harmed by one. Human beings will shrink from a snake, wolf or bear, or let us say hyena. But a giraffe, deer or even an elephant do not create any special fear, even though their size is greater.

SPRAYING METHOD USED

The tracks that rats leave in buildings are easily recognizable. These are indicated by dirty marks, brown scratches and other trails along the base-boards, up beams, and across rafters, to points of egress to other floors. The Petra is mixed one ounce to the gallon of solvent. It is sprayed along these lanes where the vermin pass. They pick it up on their warm paws, and since it is their habit to clean their feet by rubbing them across their heads and faces, they soon impregnate their fur with the scent of the skunk. They carry this scent, like "belling the cat" behind the partitions and under the floors where human hands cannot reach. They return to their nests, where they are objects of suspicion to their own kind. As other rats repeat the operation, soon the whole building is permeated with the odor of the skunk. The rats leave and do not return, knowing from instinct that their enemy is there, even though they do not see him.

Photo by Frederic Lewis

An important natural enemy and repellent of rodents

Survey of Balsam Tolu and Oil of Balsam Tolu

Collection of the balsam continues all year around except during heavy rain periods . . . There is just one quality of balsam Tolu . . . Various lots differ only in color

by DR. ERNEST GUENTHER

Chief Chemist, Fritzsche Brothers, Inc., New York, N. Y.

Copyright 1945 by E. G., N. Y.

THE botany of the tree from which balsam Tolu is derived has been the subject of considerable controversy. The United States Pharmacopoeia, Twelfth Revision, classifies it as *Myroxylon balsamum* (L.) Harms (fam. *Leguminosae*). Tschirch[1] expressed the belief that both the tree yielding balsam Tolu and that yielding balsam Peru are merely physiological forms of *Toluifera balsamum* L. Thoms[2] stated that balsam Tolu is derived from *Myroxylon balsamum* (L.) Harms, var. α *genuinum* Baill., and balsam Peru from *Myroxylon balsamum* (L.) Harms var. β *Pereirae* (Royle) Baill.

BALSAM IS PACKED IN TIN CANS

Myroxylon balsamum L., a tall tree with a spreading crown, differs from the Peru balsam tree only by its habit of branching about 15 meters above ground. It occurs wild in the great forests of the province Tolu, along the Magdalena and Cauca rivers in Colombia. The balsam forms in trunk tissues as the result of injuries. To stimulate the formation, Indians lacerate the bark of the trunk by making incisions with machetes. Burlap is then wrapped around or caulked into the wound to absorb the balsam as it slowly exudes. The balsam-soaked burlap is finally boiled in water, pressed, and the balsam purified. The whole procedure is very like that followed in producing balsam Peru. Collection of the balsam continues all year around, except for the period of heavy rains when the forests become impassable. The purified balsam is packed in tin cans and exported mainly from Barranquilla. There is just one quality of balsam Tolu; various lots differ only in color which ranges from light yellow to reddish black. No price differential is made because of color.

Dr. Ernest Guenther

DESCRIPTION OF THE BALSAM

Balsam Tolu is a shiny, translucent, yellowish or reddish-brown, viscous mass, the consistency of which varies considerably with the temperature. With age it becomes a plastic solid, turning soft at about 30° C. and melting at 60° to 65° C. Prolonged aging causes the balsam to change to a hard and brittle rosin-like mass. The odor is pronounced, sweetish, vanilla-like; the taste warm and aromatic. Balsam Tolu is nearly insoluble in water and petroleum ether; soluble in alcohol, ether and chloroform. The United States Pharmacopoeia specifies an acid number of 112 to 168 and a saponification number of 154 to 220. The balsam must not contain any rosin, rosin oil, or copaiba, tests for which are given in the U.S.P.

Genuine lots of crude balsam Tolu, imported since 1927 from Barranquilla and analyzed in the New York laboratories of Fritzsche Brothers, Inc., had constants which varied between the following limits:

Acid Number	102 to 146
Saponification Number	154 to 202 (one lot as low as 150)
Solubility	Soluble in alcohol, chloroform and ether.

The rosin test, according to the method of the U.S.P. XII, was negative in every case.

As can be seen, the acid number of some of the above mentioned shipments falls below the lower limit (112) of the U.S.P. XII. This, in the author's opinion, indicates no inferiority in quality since both benzoic and cinnamic acids are odorless and contribute nothing to the odor character of the balsam. Therefore, it is recommended that in the next revision of the U.S.P. the lower limits for the acid number of balsam Tolu be reduced from 112 to 100; making the limits read: "100 to 168."

The properties given above apply to both the crude and the cleaned balsam because the limits of the two overlap and nothing would be gained by listing them separately. Cleaning, in this case, simply means removal of dirt, wood particles and insects, no chemical change taking place. It might be pointed out here that practically and economically it is almost impossible to remove all such inert material, and the presence of minute amounts does not violate the requirements of the U.S.P. XII. This may be stated on the basis of the comment made in the U.S.P. XII, page lxxv, paragraph 5 of General Principles. A quotation from this paragraph reads:

[1] *Die Harze und Harzbehalter*, 2d Ed., Leipzig, 1906.
[2] *Handbuch der Pharmazie.*

"Vegetable drugs are to be as free as practicable from insects or other animal life, animal material, or animal excreta."

Many cans contain water. This water rises to the top of the can and should be taken into consideration when sampling for analysis.

SEVERAL METHODS OF DISTILLATION

Steam distillation of balsam Tolu yields 1.5 to 7.0 per cent of a volatile oil which is lighter or heavier than water, according to the quality of the live steam employed. Distillation with low pressure steam results in oils lighter than water, while superheated steam or steam of high pressure gives better yields and heavier oils.

According to Gildemeister and Hoffmann,[3] the oil distilled from balsam Tolu has the following constants:

Specific Gravity at 15°C.	0.945 to 1.09
Optical Rotation	—1°20' to +0°54'
Refractive Index at 20°C.	1.537 to 1.560
Acid Number	5 to 34
Ester Number	153 to 208
Solubility	Usually not soluble in 80% alcohol; soluble in one volume of 90% alcohol, opalescent to turbid with more.

Oils distilled by Fritzsche Brothers, Inc., in their French (Seillans, Var) and American (Clifton, New Jersey) factories had constants which varied between the following limits:

	American Distilled Oils	French Distilled Oils
Specific Gravity at 15°C.	0.916 to 0.922	0.907 to 0.973
Optical Rotation	—1°58' to —3°58'	—1°5' to —4°0'
Refractive Index at 20°C.	1.5092 to 1.5108	1.5075 to 1.5241
Acid Number	68..6 to 78.4	23.8 to 58.8
Saponification Number	105.5 to 109.2	85.9 to 145.9
Solubility at 20°C.	Soluble in 0.5 vol. and more of 90% alcohol.	Soluble in 0.5 vol. and more of 90% alcohol.

Results of the earliest investigations on the chemistry of Tolu balsam oil, which date back more than one hundred years, were vague and rather contradictory. The following constituents have so far been identified in the oil:

a terpene, probably phellandrene — The hydrocarbon b.p. 170° C./atm. pr. consists, according to Kopp,[4] of a terpene. Because of its elemi-like odor, this terpene is probably phellandrene.

benzyl benzoate and *benzyl cinnamate* — These esters were identified by Busse[5] in the balsam and are, therefore, probably present also in the oil distilled from the balsam.

farnesol — Occurs in the oil, according to Elze.[6]

The balsam itself is used as a feeble stimulant expectorant in cough mixtures, and as an inhalant in cases of obstinate catarrh.

Oil of balsam Tolu, on the other hand, is employed mainly in high-grade perfumes because of its most agreeable, hyacinth-like odor which blends well into flowery and oriental type compounds. Skillfully employed, it produces unique tonalities.

[3] *Die Atherischen Ole*, 3d Ed., Vol. II, p. 878.
[4] *J. Pharm. et Chim.* III. 11 (1847), 425.
[5] *Ber.* 9 (1876), 830.
[6] *Chem.-Ztg.* 34 (1910), 857.

Domestic Essential Oil Experiments

AN interesting report has been received here about the essential oil production in East Texas, under the supervision of the Texas Engineering Experiment Station, A. & M. College, at the College Station. The report came from J. H. Sorrels, Research Associate, and was transmitted by the National Farm Chemurgic Council. Particular appreciation is expressed in the report for the "very helpful cooperation of Dr. Ernest Guenther of Fritzsche Brothers, Inc.," who explored various phases of the experiment with his staff. The study was undertaken to investigate the possibilities of an essential oil industry in Texas, particularly since there already was established in East Texas a nursery industry growing rose bushes by the millions. The blooms were a loss in the business of the industry so far as bringing in any revenue was concerned. Buds had been successfully dried for sachet and medicinal use, but nothing was known about the possibility of recovering attar. The report gives complete detail about the three methods used for recovery. The final successful product in the experimentation for three years was "rose absolute" containing attar and a small amount of floral waxes. Rose species commonly used in Europe were grown for comparison. Rose damascena, Rosa alba, Rosa gallica, and Rosa centifolia were tried. Only the last grew successfully under East Texas conditions. The oil was judged to be entirely satisfactory and similar to European oils. Eight varieties of the more fragrant Hybrid Tea roses were also used, the Aroma, Kaiserin Auguste Viktoria, Talisman, Etoile de Hollande, Briarcliff, Red Radiance, and Condesa de Sastago, and a field run of mixed varieties.

The average absolute oil yield of all hybrid varieties was only 40% of that obtained from the Rosa centifolia. It was found the odor of the oils was distinctly different from that of the European rose. While no effort was made to ascertain exact labor costs, it was pointed out that two or three times as many hybrid roses were required to produce the same amount of oil obtained from Rosa centifolia, which naturally spells that production cost of the hybrid roses would be high. On the other hand the hybrid rose blooms would be by-products of an established industry, and the bloom production is more or less continuous.

Investigation also was made of essential oil possibilities in other plants. The Cherry Laurel was found to have oil of high quality and good yield. Horsemint (monardo fistulosa) in full bloom yielded 1.0 to 1.11% oil, with a strong and pleasant odor indicating high content of thymol and carvacol. Specific gravity was high (.947) but the phenol content was normal, 68%. The plant yield was 5,300 pounds per acre the second year, from a poor dry-natured soil. It is assumed a second cutting is feasible. Mountain Mintweed (Pycanthemum albescens) yielded 1.6% oil, with high pulegone content of 91.7%, and specific gravity of .934. The oil compared favorably with imported oil of pennyroyal. The plant yield was 4,700 pounds per acre. Goldenrod (Solidago odora) yielded 2.8% oil, and it appears the oil seems to be of decided interest to the industry.

Cosmetic Trends in the Middle West

Survey reports of large buying chains show further increased sales in treatment creams . . . Shaving creams continue to be difficult to obtain . . . Ever-increasing sales in men's toiletries in certain sections of the South

by JEAN MOWAT

NOW that the coldest winter in half a century has been pushed into history by sunny days and spring flowers, cosmetic buyers from Minneapolis to Brownsville, Texas, are wondering about the summer. While the middle west shivered, the south had rain and high humidity. Then the sun came out and everyone went for a bath of sun and air, but more often than not forgot his sun-tan cream. And in most instances it was a HE. *She* dabbed on some cream and let the sun do its work.

BUSINESS WOMEN USE COSMETICS

Roving about the country the past few weeks has revealed several factors. Business women as a whole give much more attention to their skins, to their make-up, and the correct color effects, than does the woman in the home. While this is not a new trend, it is one which many firms might stress as a means of increasing sales.

During this trip women wailed because they had exhausted their built-up stock of creams and lotions which were bought to avoid the added luxury tax. These people will be in the market during the next six weeks and an upturn in sales will be felt all through the valley of the Mississippi and surrounding territory.

TREATMENT CREAMS POPULAR

Interviewing more than a dozen cosmetic buyers in several cities, and seeing survey reports of large buying chains that make beauty goods a major item of sale, one is impressed with the great amount of increased movement on treatment creams. Another trend that is growing more important than at any time, is a cream base in any of the tones to give one a sun-tan, if one cannot obtain it under ordinary sunlight.

"What we really need is a great number of units from the same company," said a leading cosmetic merchandiser. "We find that when we can offer powder, lipstick, nail-polish and hand cream as a unit sale in which there is a matched color, business is much better than selling a single item." The idea is one which a certain firm is putting into effect and it includes a dry perfume, bubble bath, talcum and bath crystals, all boxed as one item and so priced.

Since the Mother-and-Daughter idea caught on so well in apparel it was only a matter of time until some smart outfit would find a cosmetic use for it and this has appeared as a mother-and-daughter powder mitt. One blessing is mother will know her mitt will remain in its place!

An item that is having an appeal is to select the type of lipstick as it appears on the skin. A sheet of clear plastic has the colors applied to it, and it lifts up, so that one's hand may slip under, and the color choice made. It is a neat idea and may start a new and easy method for the self-serve counters.

NEW FLORAL SCENTS

Easter and new floral scents went together. But the ten days before the celebration of this festival, things were quiet in the northern stores, while in Texas business was humming. Spring had come, the early blossoms had dropped, and the figs were popping out. Easter scents and colognes were well scattered as to type: Blends in light airy perfumes; sophisticated and floral odors sold in about the same proportion—if the name was gay and created an emotion. The florals had more Northern appeal than in the South and there was also a good sale of the spicy odors throughout, indicating that not even 2,000 miles of territory makes a great deal of difference.

Texas women don't care for the cream colognes any more than those in Minneapolis, but after women have been educated there is a demand, and women buyers expect it to continue. The men buyers almost as a unit agree it is too messy and will never compete with the liquid colognes when alcohol is again on the free list. This trend will be interesting to watch.

SHAVING CREAM SUPPLY TIGHT

Leg make-up is an item of much discussion. It has reached a new peak in sales, but at the moment it is having competition—cake make-up is being used as it is more easily and quickly applied and also more evenly. On the other hand, few buyers with whom we spoke seemed to be concerned about placing new leg make-up orders, for there is a tendency for a natural tan and this will take precedence over any application of make-up. Shaving cream will continue to be difficult to obtain. Tooth paste in tubes is reported in very short supply, but some buyers find powder being accepted.

Not often is an ad on men's toiletries used, but a recent announcement by Marshall Field & Co. had an illustration of these and stressed "the invigorating tang of the outdoors captured in bottles hand-printed with bright game birds." Cologne, after-shave lotion, hair dress, talcum and shaving bowl was featured in the ad. Joske's, of San Antonio, reports an ever-increasing sale of men's toiletries, and the section is located adjacent to the men's store.

March sales of well known creams served to boost the total volume, and the number of pounds sold indicated that women were considering them

important for thorough cleansing. So much attention is given to cleanliness in the South, due to the hot weather that lasts over some nine months, that soap is a very big item and a top seller at the moment. In the Northern stores, from St. Louis, Des Moines, in a swing around to the Twin Cities, this is not so much featured either in display or in advertising as in the Texas group.

With these cities in the North having only some three months of hot weather, and then usually breaks, skins retain their normal oils much later into life than in the South. Here one sees the vast difference between women in the home and in business. The latter are alert and maintain a smooth, even complexion, that at fifty shows little aging, but is generally strong and firm, while the home and club woman does not take the same care of her complexion. She would if education was given on the topic, but she hears little of it. As proof of this, any cream that is featured as having some suggestion of vitamin or "life" for the skin can hardly be kept in stock, and usually it is one which has been offered in the usual way, but because it moved slowly a new approach was necessary. The women in the North also eat up this same type of advertising "but it must carry conviction and prove its point," said a buyer.

The actual arrival of warmer days throughout the middle west has increased the demand for that flush of pink which every woman is trying out, or else dipping a little into the more flatterjng tones of brown or purple. Few buyers think the pink cast will carry through the summer. Definitely not if it proves to be another blistering summer.

QUALITY HAIR DYES SELLING

Hair preparations are gaining in importance. This may be due to the folding money that is about in more volume, but in many cases it is said that women are buying quality. Few stores carry any but the best in hair dyes, and none of them guarantee the result. Yet this is a very large part of the sales in some stores. Cream shampoos which are gaining in volume sales in the North are showing a sharp upturn in other sections. Liquid shampoos continue to be first in sale, but buyers are watching these with great alertness and some anticipate a change, but are not sure what may be expected.

A prediction made by a leading store is that in the post-war days a cosmetic section will be a series of booths with a brand name heralding the name of the maker or brand. Some stores in Texas have already done this and if the customer does not find what she wants at that particular booth she has to hunt at another spot, and another salesperson. Leaders in the buying end, who are trying to please everyone, do not consider this as satisfactory to the customer. Brand names are important, but grouping merchandise together is more effective than subdividing it to make a customer run about the store. Both sides, of course, have their ideas and can prove by their sales figures they are right. This may be the case but in the final page the customer will decide, and she is always looking for the easiest place to shop and how it may be done quickly.

GOOD PACKAGING IS STRESSED

"You can't stress fine packaging too much," said a chain executive. "We find it is the one outstanding means of a good sale. But will you suggest that the contents match the container and case? The men buy them. The women return them and will take the difference between the package and the bottle in a perfume of their own choice, or in any of the colognes, creams, etc. We definitely want quality where so much labor and thought has gone into a lovely gift package," said this executive.

Australian Essential Oils

A firm in Western Australia is manufacturing ginger oil, grass oil, mace oil, nutmeg oil, orange oil, orris oil, patchouli oil, rosemary oil, and sandalwood oil. The raw materials for the production of ginger, mace, nutmeg, orris, and patchouli oils are imported. Imports of ginger in all forms fell steadily from 3,257,711 pounds in the year 1937-38 to only 47,074 pounds in 1942-43. China and Hong Kong were the chief sources of ginger until 1940, when they were supplanted by India. Exports of patchouli oil dropped from 1,361 imperial gallons in 1937-38 to 95 gallons in 1940-41. Before the war, Germany purchased considerable quantities, and in 1940-41 Brazil was a buyer; the United Kingdom has always been the principal market.

Australian raw materials are used in the manufacture of ginger-grass, orange, rosemary and sandalwood oils. Australian production of orange oil does not meet the domestic demand, and imports of the oil were valued at £9,382 in 1940-41, 13 per cent coming from Italy, 22 per cent from the United States, 22 per cent from Rhodesia, 28 per cent from the British West Indies, and 15 per cent from other sources. Although Australian production of sandalwood oil increased from 9,766 imperial gallons in 1939-40 to 17,124 gallons in 1940-41, imports have also increased to meet domestic and re-export demands. Except for the year 1940-41, exports of sandalwood oil averaged 2,000 imperial gallons from 1937 to 1942, but subsequently declined. The United Kingdom has always been the chief market for Australian sandalwood oil; other customers have been the Netherlands Indies, the United States, and Germany.

Imports of lavender oil into Australia fell steadily from a value of £Aus9,066 in the year 1937-38 to about one-ninth that sum in 1942-43, with France and the United Kingdom as the principal sources of supply.

Before the war Italy was the chief source of lemon oil, but now India and the United States supply Australia. Imports of this oil increased in value from £Aus30,096 in 1937-38 to £Aus44,882 in 1938-39 and then decreased gradually.—*Foreign Commerce.*

Russian Essential Oils

All factories of the Ukraine's prewar essential oil industry have been restored to production, according to the Soviet press. Many of the Ukrainian agricultural areas recently harvested their first crop of corriander, mint, cumin and lavender.

During the coming spring season, the planting of roses and lavender will begin in the Izmail Province bordering on the Danube River.

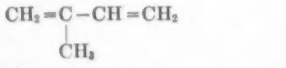
Before the war the farms of the Ukraine devoted 27,000 hectares to raising oil-bearing plants, and the factories of the area annually processed more than 300 tons of essential oils annually.

Terpene Alcohols

by DR. ARNOLD BELLER
Centflor Manufacturing Co.

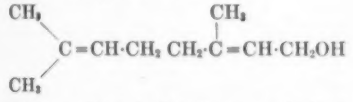
THE oxygen derivatives of the terpenes belong to the most important representatives of the vast group of isolates derived from plants containing essential oils. They present little interest in synthesis, since for technical reasons their complexity limits the use of raw materials to their original source.

It has been generally recognized that the skeleton of all occurring terpenes can be formed from the molecule of isoprene, which is the methyl-butadien



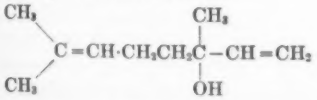
This conclusion limits the variety of types. The open chain terpene alcohols with 10 carbon atoms have, therefore, to be considered as consisting of two isoprene molecules, and are classified as monoterpenes. To this class belong the most important chemicals in aromatic chemistry.

Geraniol is an olefinic monoterpene, having the formula



and was first isolated from Indian oil of geranium. In recent times citronella oil from citronella Java has been the main source of this product. It is found also in geranium, palma rosa, rose oil, and in smaller quantities in other oils.

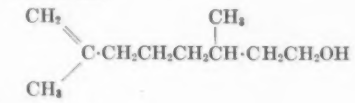
The structure of geraniol is determined by the oxidative degeneration of citral, its corresponding aldehyde. The extremely important and widely distributed isomer of geraniol is linalool, with the formula



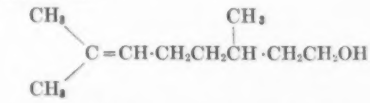
It is a tertiery alcohol occurring in Brazilian rosewood oil, Mexican linaloe, ho-oil, and as an acetate in bergamot, lavender flowers, coriander, and in many others. Its structure has been proved by its synthesis through the condensation of methyl heptenone and acetylene. The relation between geraniol and linalool is clearly demonstrated through their transformation into each other under the influence of acids. The literature describes several methods of converting geraniol into linalool, and the author obtained the best yields by treating geraniol with oxalic acid. Both alcohols readily pass into dipentene when treated with dehydrating agents such as phosphoric acid by ring closure. Nerol, a stereo-isomer of geraniol, found in oils of neroli, should not be overlooked.

Whereas geraniol and linalool possess two double bonds, we find the two important stereo-isomeric alcohols, citronellol and rhodinol, contain only one double bond. They occur in geranium and rose oil, in its laevo form and in both optical forms. Formulas are:

Citronellol



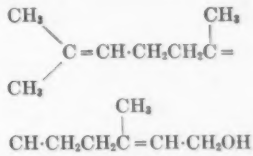
Rhodinol



Citronellol is rarely obtained by isolation from oils. Technically, it is produced by reducing the citronellal from its corresponding aldehyde, which is isolated from citronella Java in normal times. Today, since the oil is practically unobtainable, we should be thankful to those who introduced the oil of eucalyptus citriodora as the main source of citronellal. This product is different in optical activity from citronellal distilled from citronella.

Rhodinol is isolated from different geranium oils, which are always found in the laevo form. Its corresponding aldehyde has not been found in nature, and can only be obtained by oxidizing rhodinol. By treating these terpene alcohols with dehydrating agents we get iso-pulegol, whereas geraniol yields dipentene, as has been mentioned above.

During the past fifteen years Ruzcicka and his collaborators have found the structure of various types of terpenes, and among others farnesol seems to be the most interesting. It belongs, according to the isoprene rule, to the so-called sesquiterpenes alcohols, with an open chain of carbon atoms. The formula of this alcohol is:

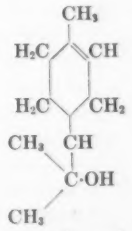


and it occurs in musk kernels, oil of cassie, and other blossom oils. The position of the double bonds has been established by its molecular refractivity, and the number of double bonds by the quantity of bromine which farnesol is able to absorb. Oxidation yields an aldehyde, proving it a primary alcohol.

The stereo-isomer corresponding to farnesol is nerolidol, a secondary alcohol. Its relation to farnesol is the same as that between linalool and geraniol, and undergoes the same conversion through acids as does linalool. Ruzcicka has synthesized a racemic nerolidol in a way similar to his linalool.

Of the monocyclic terpene alcohols we will mention only a few which are well known, as a complete study would require a thorough investigation of related literature, and would go beyond the frame of this series of articles, which are intended to only give superficial information on important aromatics.

Terpineol has the following formula:



This commercial product is a mixture of different isomers known as alpha, beta and gamma terpineol, with different positions of the double bond, and the hydroxy group. It has a pleasant lilac-like odor, and is found in many essential oils, such as cajeput, cardamon, marjoram, nutmeg, etc. Technically, it is made from terpene hydrate by dehydration. Related to this group, and extremely important, is menthol in its different forms and isomers. It is a saturated cyclo-terpene and can be synthesized from citronellal.

We may discuss many of the less common terpene alcohols of the poly-terpene and poly-cyclo-terpene group in a future article.

Short Adages

by R. O'MATTICK

THIS is written on the first day of April—by the time it appears in print the Nazis may have given up completely and all our military efforts will be turned toward Japan. Many are of the opinion that at least another year will be required to lower the Rising Sun but the end will come much sooner if our efforts do not slacken.

When the end does come we will find ourselves in a world no longer at war in the sense of armed forces killing each other and destroying whatever can be seen from sky, land or sea. But unfortunately it will still be a world without peace for there are already forces at work pulling in every direction. The period of reconstruction will be a long and difficult one, full of doubts, plots, intrigues and political eruptions.

We do not see the end of the war as a grand holiday like the Armistice Day of November 11, 1918, followed by everyone running to cash War Bonds and start on a spending spree to buy the post-war automobiles, refrigerators, garden hoses and the thousand other items now pictured in the nation's magazines.

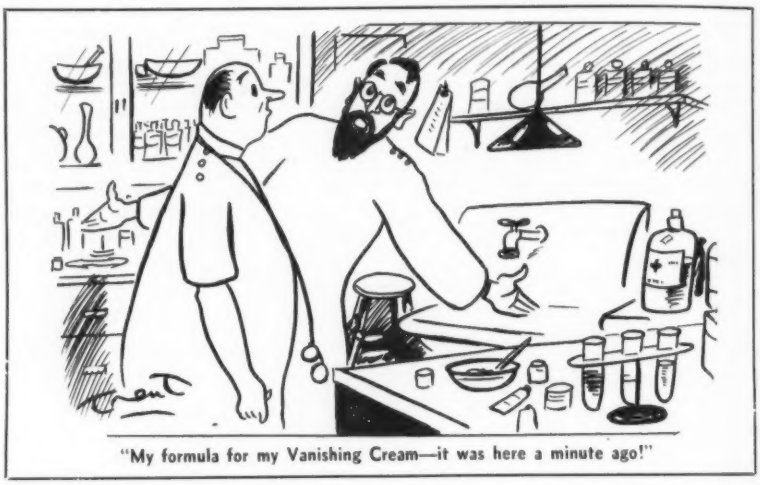
It won't be quite as simple as that! The great mass of people, war-weary and disillusioned, will want to forget after the shouting is over and to resume their normal lives as best they can from where they left off before the war came. For some this will not be too hard but for the ten million men in uniform a hundred problems will have to be faced. May we be as united when we face these problems of peace as we are during the days that we face the enemy in war.

* * *

Otto stock says his most exciting hobby at present is collecting cans of sandalwood oil and patchouli oil (full ones, of course). So far he hasn't collected very many of them.

* * *

Mr. A. Goodbuy has taken us into some secrets of the manufacture of toilet waters which have baffled and amazed us. "When alcohol quotas were cut," he whispered, "we began to put out toilet waters with 80 per cent alcohol instead of 85 per cent, then 70 per cent, 60 per cent, 50 per cent, etc., there being no shortage of water supply. But our chemists had to struggle with the problem of keeping perfume oils soluble in a toilet water having a lowered alcohol content. We tried all sorts of methods and products—none of which proved completely satisfactory. Now that even the ordinary perfume compounds are becoming scarce, we have to use less and less perfume oil so the solubility problem is not too bad." All of which shows how one evil cancels another and that necessity is the mother of invention.



"My formula for my Vanishing Cream—it was here a minute ago!"

* * *

"What is an Eau de Cologne, really?" asked Alice in Wonderland, when she met the Walrus in the Apothecary's shop.

"I don't exactly know, myself," replied the Walrus, "except that *Eau* means *water* in French."

"Oh," said Alice, "that explains everything, and maybe Cologne means *smell* in French because this water does have a smell."

* * *

No, June, "Capturing the Odor" has nothing to do with the fragrance the good Dr. Rowmateral is trying to duplicate and which is in the Petunia flowers or whatever weeds he has in his laboratory.

* * *

This interlocking corporation business can become a strange affair. We know the Vice-President of one company who has a large interest in that company. They sold one of their subsidiaries to a cosmetic house in which this same Vice-President is one of the important stockholders. Figure it out. Is it a question of selling to Peter to buy from Paul or has someone sold himself something he wants because he doesn't want it.

* * *

"We live in a changing world," said June Ippère wistfully. "I am smoking brands of cigarettes I never smoked before and chewing gum with wrappers I never saw before. But Dr. Rowmateral still dictates letters the way he always did by rewording each sentence three times and then after the thing is finally on paper, saying not to bother sending it as he would see Mr. Filter during lunch anyway and explain the whole thing to him."

* * *

Dr. Rowmateral cannot wait until he starts his world travels again. He has spent the whole of his life in the field of perfumes and cosmetics and he says that one of the most fascinating things about it is its international character.

We found him the other day immersed in a copy of *El Farmaceutico en las Americas*, that journal which reaches many of our Latin-American friends.

* * *

Many of the readers of THE AMERICAN PERFUMER have interesting hobbies—some of these hobbies are connected with their work, such as collecting perfume bottles—others are hobbies that are quite far away from their own particular field—such as fishing, painting in oils, stamp collecting or what not. If you have some interesting hobby write to us about it.

Technical Abstracts from Scientific Literature

These brief abstracts listed provide a convenient key to current scientific literature of the world on perfumes, cosmetics, soaps, dentifrices and other preparations

Identification of White Mineral Oils Such As Those Used for Medicinal Purposes. U. S. pat. 2,325,421. About one part of B-carotene is added per 25-100 million parts of the oil to give a distinctive light absorption effect in the visible spectrum and being converted, by exposure of the composition to light, to a product having a different light absorption effect, thus providing a confirmatory means for identification of the composition spectrophotometrically. (Through *C. A.* **38**, *457, 1944.*)

Analysis of Cellulose Derivatives. *Total Acyl in Cellulose Organic Esters by Saponification in Solution.* C. J. Malm, Leo B. Genung, R. F. Williams, Jr., and M. A. Pile. *Ind. Eng. Chem Anal. Ed.*, **16**, *501, 1944.* Most saponification methods for the determination of total acyl in cellulose organic acid esters involve heterogeneous conditions. A method has been developed in which the sample is saponified in solution. As a result, homogeneous saponification conditions exist which eliminate errors due to the condition of the sample, improve the accuracy, shorten the time of saponification, and give a better end point. The effects of time, temperature and alkalinity were studied and the optimum conditions for each were established. The range of applicability of this method is discussed and compared with the Eberstadt and alcoholic alkali methods. The basic principle followed involves solution of the sample in a suitable solvent, followed by stepwise additions of alkali and water under conditions such that the ester remains in solution until saponification is practically complete. The regenerated or only slightly esterified cellulose finally precipitates in a soft finely divided form which does not interfere with completion of the reaction or the back-titration. The precision obtainable by this method has been evaluated and limits of uncertainty (maximum range within which nearly all carefully run values should fall) are 0.1 to 0.2 per cent acetyl, depending on the type of ester being analyzed. A measure of the accuracy of the method was obtained by analyzing samples for free hydroxyl and for acetyl or apparent acetyl (saponification value calculated as acetyl) and complete acyl in the case of cellulose mixed esters. The observed acetyl or apparent acetyl values were compared with those calculated by difference from observed free hydroxyl contents and molar ratios of the acyl groups in the case of cellulose mixed esters, assuming exactly 3 hydroxyls per glucose unit of cellulose. The agreement was well within experimental error.

The Preparation and Testing of Spiritus Saponatus. Imre. Nemedy. *Ber. ungar. pharm. Ges.*, **18**, *253-9 (1942.)* The value of soap depends not only on its fat acid content but especially on the ability to produce foam. To test this ability, sodium and potassium soaps or the alcohol soaps were prepared from different fatty oils, and 5 cc of each of these preparations was shaken for 0.5 minute in a closed glass tube; the height of the column of foam, its quality and the length of time until it disappeared, were observed. It appeared that, for the preparation of alcohol soaps, those sodium soaps were the most suitable which were made from coconut, olive or castor oil. (Through *Oil & Soap*, **21**, *214, 1944.*)

Hair Dye. German No. 717.748. Together with acid mono-or polyazo dyes are used water-soluble cationically active compounds which spread well on the hair. The substance reacts with the acid groups of the azo dye to form insoluble dye-ammonium double compounds. (Through *C. A.*, **38**, *2458, 1944.*)

Washing Living Hair. U. S. pat. 2,289,004. An acid preparation for washing hair is formed containing sodium dodecyl sulfate or other compound of the general formula RSO_3M, in which M represents sodium, potassium or ammonium, and R is an alkyl radical containing over 11 carbon atoms, connected to the SO_3 by oxygen, sulfur, CONHR', CONRR' or OR, in which R' stands for an alkylene radical and R" for methyl or ethyl, together with a weakly acid ingredient such as tartaric or citric acid. (Through *J. A. Ph. A.* **33**, *41, 1944.*)

Antiseptics of the Quaternary Ammonium Type in the Presence of Positive and Negative Gelatins by L. F. Tice and R. Pressman. Antiseptics of the quaternary ammonium type are known to be incompatible with soap and it is furthermore known that their bactericidal efficiency is lowered by the presence of soap. The authors have investigated combinations of several cationic antiseptics to determine whether gelatins charged negatively or positively differ in their influence on these substances. The possibility of coacervate formation with a negative gelatin has been investigated and the effect of both types of gelatin on the bactericidal efficiency of quaternary ammonium compounds has been studied. (From the *American Pharmaceutical Association Convention Scientific Paper No. 11.*)

Aluminum Acetate. Wolfgang Heubner. *Klin. Wochschr.*, **21**, *815-16 (1942.)* A study of the literature indicates that liquor alumini acetatis represents implicitly a combination of colloidal aluminum hydroxide and acetic acid and that its astringent action is to be ascribed to the aluminum hydroxide and its antiseptic action particularly to the acetic acid. (Through *C. A.*, **38**, *2447, 1944.*)

Packaging Portfolio

SCHIAPARELLI: Wrapping paper with a heart design will enclose all packages from Parfums Schiaparelli, Inc. Left to right—Salut Dusting Powder in navy and white; Sleeping Dusting Powder and Eau de Cologne in blue and white; Snuff Eau de Cologne in a brown and white wrapper.

RICHARD HUDNUT: An old-time favorite, Violet Sec fragrance, makes its appearance in a brand new package. The dusting powder and talc come in pretty pink, gold-striped boxes topped with a modern bunch-of-violets design.

ANTOINE: Gay Gossip is the name given to Antoine's new make-up group. The new Turquoise Eye Shadow complements the true, deep pink color harmony. Shown with Gay Gossip is Antoine's dainty make-up kit which comes in white with yellow facing and piping.

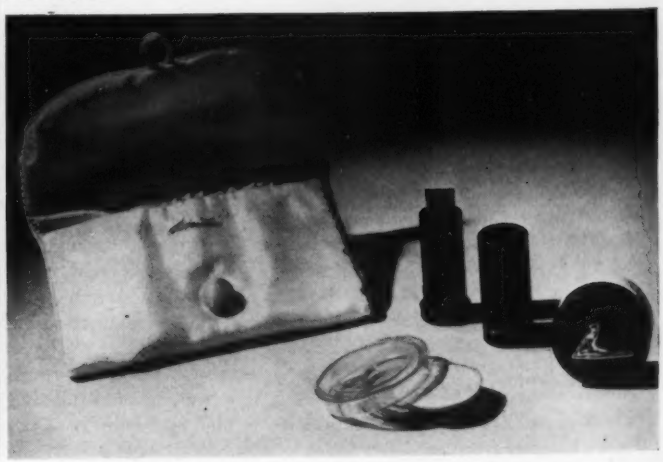
SCHIAPARELLI

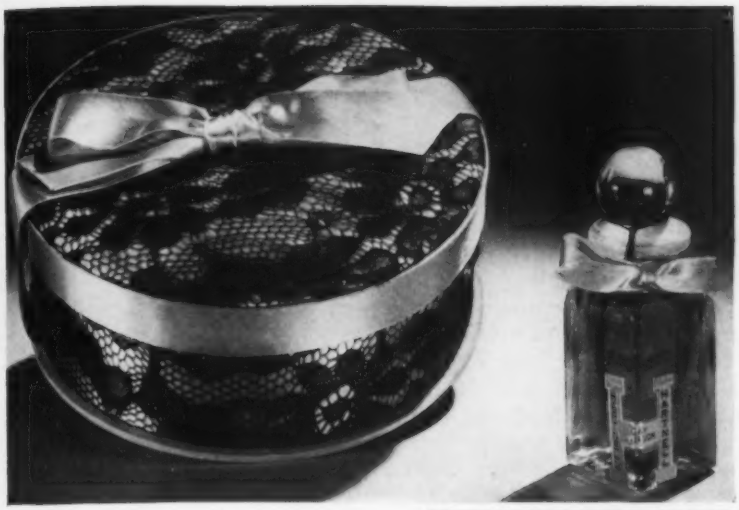
LE SONIER: The new powder and soap mitt combination comes in lush pink or blue. Each package holds a terry cloth filled with fragrant powdered soap and the powder mitt filled with bath powder. The mitt is made of rayon faille; the bath mitt of matching terry cloth.

LE SONIER

RICHARD HUDNUT

ANTOINE





HARTNELL

HARTNELL: A one-ounce bottle of Hartnell's Gay Diversion is neatly tucked away in a striking package. The box is covered with orange rayon satin with black lace over it. An orange ribbon ½ inch wide, tied in a bow, completes the unusual effect.

LYNETTE: Spellbound, the not too sweet nor too heady perfume is packaged in a handsome white box with gold lettering. Also available in toilet water, dry perfume and dusting powder, the perfume comes in four sizes. A one-dram pocket flask is also available in a handy leather case.

LYNETTE

ROSE LAIRD: Leg Tone is presented in two shades—Light Rusglo (beige) for the average user and Rusglo (suntan) for those who prefer that "toasted" look. Leg Tone comes in an eight-ounce bottle having a white label with the name Rose Laird, in pink lettering.

ROSE LAIRD

POND'S: A threesome of powder, lipstick and dry rouge in companion colors is packaged in the new dream-flower powder box especially created for this combination. Pond's make-up trio somes in six different color sets to match individual skin types.

POND'S

PARDI: A highly-concentrated night cream of very fine texture designed to help dryness, is applied every other night. Packaged in an unusual brown jar with green lettering, Pardi's night cream makes a striking addition to a woman's array of cosmetics.

PARDI

Survey of Recent Cosmetic Patents

Registered Agent before the U. S. Patent Office discusses U. S. and foreign patents . . . Any inquiries relating to patents and trade marks will be met with prompt attention . . .

by I. J. FELLNER, Ph.D.

Ultraviolet light filter compound. To Fries Bros., Inc., New York, N. Y. *U. S. 2369084, Feb. 6, 1945.* The compound 1-methyl-3-dimethyl-cyclohexanyl-(5)-salicylate having the following constants:

Boiling range 4 mm	C° 161-165
Refractive index 20°C	1.516-1.518
Spec. gravity 25/25	1.045-1.048
Optical rotation	0.

Foam generating substances. To Pyrene Development Corp., Newark, N. J. *U. S. 2368623, Feb. 6, 1945.* Proteinous material is treated with an excess of hydrolyzing agent such as calcium oxide, calcium hydroxide, etc., after completion of hydrolysis the excess hydrolysing agent is neutralized with hydrochloric acid.

Parasiticides. Frank B. Smith and John N. Hansen, Midland, Mich., to The Dow Chemical Co., Midland, Mich. *U. S. 2367534, Jan. 16, 1945.* The composition consists of a toxic ingredient selected from the class of the diaryl-guanidine and aryl-biguanidine salts of dinitrophenols in intimate mixture with a carrier.

Preparing hydroxy heavy metal soaps. Arthur Minich, Westfield, N. J. *U. S. 2368560, Jan. 30, 1945.* A dispersed hydroxy metal soap in a dehydrated organic vehicle is produced by thermally dehydrating in a substantially water immiscible organic vehicle an aqueous magma comprising the reaction product of an alkali hydroxide and a sufficient quantity of at least one water soluble heavy metal salt to completely react with the alkali hydroxide, then being present in said vehicle during said dehydration step a quantity of at least one substantially water-insoluble non volatile organic acid in an amount insufficient to produce the normal salt of such heavy metal but sufficient to produce hydroxy metal soap, whereby said hydroxy heavy metal soap is finally dispersed in substantially insoluble form in said dehydrated organic vehicle.

Skin wetting and softening agent. Emert Guttmann. *French 879168, Feb. 16, 1943.* The composition contains:

Water	30 to 40%
Chalk	20 to 40%
Kaolin	5 to 15%
Talc	5 to 10%
Trisodiumphosphate	12%
Gelatinizing agent	2 to 8%

Insecticide composition. To Shell Development Company, San Francisco, Cal. *U. S. 2369429, Feb. 13, 1945.* A composition for use in aqueous emulsions comprising spray oil and a depositing and emulsifying agent consisting of a carboxylic acid ester of a polyhydroxy alcohol containing at least 3 and not more than 4 hydroxy radicals and having a neo carbon atom, said alcohol being esterified with an acid having more than 7 carbon atoms per molecule.

Oxidative hair dye. Pierre Alexandre Foucault, Gaston Jean Velsch, and Alfred Ernest Leon Secqueville, France. *French 880152, March 16, 1943.* The base of this preparation is a solid, non voluminous material such as starch. The composition contains:

Phenylene diamine (para)	30 g.
Starch	400 g.
Tartaric acid	10 g.
Ammonium carbonate	35 g.
Resorcin	15 g.

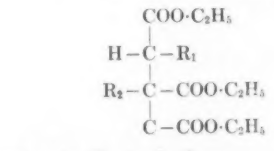
The preparation is dissolved in its equal amount of water and added with the conventional amount of hydrogen peroxide solution.

Washing agent. Kraemer & Flammer, Heilbronn, Germany. *German 734556, Apr. 20, 1943.* The preparation consists of a mixture of soap containing 11 per cent of water, alkali peroxides and disodiumphosphate containing 9 per cent of water and addition of magnesium silicate. The mass is shaped into flakes or thin leaves.

Parasiticidal preparation. To United States Rubber Co., New York. *U. S. 2368667, Feb. 6, 1945.* A fungicifal composition comprising a carrier and 2, 2, 3, 3,-tetrachloro-1, 2, 3, 4-tetrahydronaphtalene-dione-1, 4 as an essential active ingredient.

Production of hydroxy fatty acids. To National Oil Prods. Co., Harrison, N. J. *U. S. 2367050, Jan. 9, 1945.* Sulfated fatty acids sulfated fatty oils, sulfated fats, and sulfated waxes are subjected to an acid hydrolysis and subsequently hydrolyzed in an alkaline medium at a temperature within the range of 80° to 250° C.

Insecticides. To Boyce Thompson Institute for Plant Research, Inc., of New York, *U. S. 2368357, Jan. 30, 1945.* A derivate of the carboxy-succinic acid ester of the formula:



wherein R_1 is hydrogen, a methyl, ethyl, propyl or butyl radical

R_2 is beta-thiocyanoethyl, gamma thiocyanopropyl, and 6-thiocyanohexyl.

The compound is dissolved in an organic spray liquid.

FLAVORS

War Ups Sales of Synthetic Savors

Increased use of synthetic aromatics in food industries has been a gradual development . . . Scientific advances made during the war will bring about broader consumption in post-war years

by J. N. TAYLOR
Chemical Unit, Bureau of Foreign and Domestic Commerce

HOW has the war affected our production and sale of aromatic chemicals—products used as flavor and perfume materials? At first thought, it would seem reasonable to assume that wartime restrictions upon the use of such critical materials as benzene, xylene, phenol, cresol, acetic acid—to mention a few—in the manufacture of these products would have reduced their output. Actually, production has been increased.

OUTPUT LARGER

A lack of shipping facilities for bringing in aromatic exotics, as well as an increased demand generally, brought about the necessity to develop and expand domestic sources and to duplicate many of nature's products in the laboratory. The result was that domestic production of aromatic chemicals—synthetic flavors and perfume materials—in 1943 registered a total of 17,531,000 pounds, slightly lower than 1942 production but more than double the 1940 output. An annual production of more than 17 million pounds is indeed impressive when one considers that these products are used in small amounts and that a little bit goes a long way.

Reprinted from Domestic Commerce.

INDUSTRY BOOSTED WAR EFFORT

If the war has developed the industry, the industry has likewise boosted the war effort. Synthetic aromatics as ingredients of well-flavored foods, beverages and smokes, have found their way into mess kitchens, galleys, and canteens all over the world, as well as into the home. At home, too, as contributors to cleanliness and beauty, they have enriched daily living and have helped keep up morale—that intangible without which all out efforts would be unavailing.

Synthetic aromatics are used not only to please the palate and to delight the olfactory senses, but also as industrial deodorants and as odor-masking ingredients by the paint, paper, ink, leather, rubber, textile and other industries. Thus they are all-round agents entering into the industrial economy as well as the esthetic.

United States Production of Synthetic Aromatic Chemicals
(In thousands of pounds)

	1938	1940	1941 [1]	1942 [1]	1943 [1]
Cyclic [2]	3,837	5,485	9,931	7,956	8,120
Acyclic [3]	1,474	2,510	4,268	9,831	9,411
Total	5,311	7,995	14,199	17,787	17,531

[1] Preliminary.
[2] Generally coal-derived.
[3] Noncyclic.
Source: U. S. Tariff Commission.

CLASSIFICATION SIMPLIFIED

Scientific names of chemical compounds are indicative of their architecture or molecular structure as visualized by chemists. Structure has a definite relationship to properties such as odor, taste and other distinguishing characteristics. It is only logical that these structural relationships should conform to definite pat-

terns and that certain resemblances should indicate family groups.

Synthetic flavor and perfume materials may be broadly grouped as cyclic and acyclic compounds. The cyclic products consist of benzenoid compounds (derivatives of benzene and its homologs) and heterocyclic compounds. Terpenoid derivatives are found in both cyclic and acyclic groups. These broad categories may be further subdivided into classes of alcohols, aldehydes, ketones, esters, ethers, acids and lactones. Esters, offspring of the reaction between alcohols and acids, are the principal odor bearers of fruits and flowers.

Although some synthetic aromatics are in themselves pleasing, it is often necessary to blend a number of them to duplicate with faithfulness the natural products. Some of these blending ingredients are used as bases, others as fixatives; some are suitable as flavors or only as perfumes, others may serve both purposes.

Although a large number of synthetic organic chemicals have distinctive odor and taste qualities, many of them are not included in the broad group of flavor and perfume materials. Ethyl and butyl acetates, dimethyl and dibutyl pthalates, and diphenyl oxide are typical examples of compounds which, although possessing aromatic characteristics, are preponderantly used in the industrial field. The chief uses of these chemicals are, respectively, as solvent, as plasticizer, and as a heat-transfer medium. However, data showing production of synthetic aromatic chemicals do not include these or similar industrial chemicals.

Production figures on sodium glutamate, a flavoring material widely used in the manufacture of "ajinomoto," "vetsin," and the like are included at present.

SOME AROMATICS VERSATILE

Some individual aromatics stand out among their fellows, either because of their singleness of purpose or because of their versatility. Prominent among the alcohols is phenylethyl alcohol with the lovely fragrance of the rose. Of the aldehydes, cinnamic aldehyde, constituent of oil of cinnamon, gives spice to flavors and perfumes.

Vanillin, principal flavor constituent of the vanilla bean, finds a wide use in perfumery as a sweetener and blender. Its greatest use is in vanilla type flavors.

Included in the ester group are methyl salicylate, the artificial oil of wintergreen; methyl anthranilate, used to accentuate the taste and odor of grape juice and to manufacture artificial oil of neroli; methyl benzoate, sold commercially under the name of niobe oil; amyl salicylate, the basic constituent of artificial orchid perfumes.

MANY CONSUMING CHANNELS

Ability to make innumerable combinations of the hundreds of aromatic chemicals makes possible an infinite variety of finished perfumes and flavors. Tested formulations can be reproduced at will and a uniform-

Production and Sales of Synthetic Aromatics

[In pounds]

Class and item	1938		1940		1942 [1]		1943 [1]	
	Production	Sales	Production	Sales	Production	Sales	Production	Sales
Benzenoid:								
Amyl cinnamic aldehyde	57,740	47,092	82,307	77,991	87,017	66,236	51,366	36,957
Amyl salicylate	51,845	48,741	65,193	66,907	196,596	175,479	[2]	[2]
Anisic aldehyde	19,008	[2]	42,218	32,101	77,580	62,785	30,041	39,422
Benzyl acetate	[2]	[2]	246,887	250,973	369,548	317,456	241,413	288,905
Benzyl alcohol	95,162	[2]	107,336	121,084	[2]	[2]	[2]	318,122
Benzyl benzoate	38,810	36,990	78,426	77,927	105,805	97,524	[2]	[2]
Benzyl salicylate	[2]	[2]	23,773	23,381	34,550	30,899	[2]	16,234
Cinnamic alcohol	[2]	[2]	[2]	[2]	49,916	[2]	20,858	19,477
Ethyl benzoate	1,650	1,079	1,831	1,635	1,267	1,102	4,518	1,543
Methyl anthranilate	14,709	[2]	42,110	33,078	[2]	[2]	[2]	[2]
Methyl salicylate	1,287,481	1,319,395	1,641,571	1,486,791	2,250,124	2,312,461	2,724,945	2,699,387
Musk xylol	46,876	49,667	[2]	104,032	169,925	107,080	56,493	110,143
Phenyl-ethyl alcohol	121,645	120,290	193,149	171,668	325,716	[2]	166,383	[2]
Vanillin	465,077	454,948	576,708	619,407	752,541	694,067	666,746	683,963
Terpenoid:								
Citral	23,148	21,448	39,930	32,151	31,318	27,768	32,744	22,595
Citronellol	3,646	6,298	53,633	51,779	104,123	75,784	30,538	39,826
Geraniol	318,172	282,555	306,435	275,772	293,107	265,242	102,134	138,306
Geranyl acetate	9,455	7,019	28,150	26,396	[2]	[2]	13,315	14,637
Ionone	41,448	36,962	82,568	74,739	95,870	53,208	10,977	11,630
Linalyl acetate	497	696	24,248	21,017	53,854	44,320	44,874	43,425
Methyl ionone	21,642	20,113	61,157	60,949	108,696	80,517	52,957	61,127
Rhodinol	5,311	4,549	9,967	9,366	3,710	3,492	7,945	8,337
Terpineol	638,797	613,109	766,705	771,247	[2]	[2]	823,825	888,634
Terpinyl acetate	[2]	[2]	[2]	[2]	254,225	225,348	82,842	114,857
Heterocyclic:								
Coumarin	138,357	154,460	245,688	217,634	276,570	284,193	191,658	222,287
Heliotropin	32,248	[2]	34,132	[2]	31,943	[2]	39,548	29,124
Acyclic:								
Ethyl butyrate	[2]	[2]	50,291	47,668	81,056	[2]	80,055	67,182
Ethyl oenanthate	3,452	2,923	5,937	4,529	10,441	9,874	14,976	8,964

[1] Preliminary.
[2] Confidential; publication would disclose the activities of individual producers.
Source: U. S. Tariff Commission.

ity of product assured. That the aromatics—both synthetic and natural—serve important and growing industries is seen from the following data, reported by the Bureau of the Census, relating to two large consuming groups.

Production of flavoring extracts and flavoring syrups not elsewhere classified, by establishments engaged primarily in the manufacture of flavoring extracts, of syrups and fruit juices for soda fountain use and for use as sauces for ice cream and other foods, and of colors for baker's and confectioner's use, was valued in 1939 at $139,901,840, compared with $117,897,193 in 1937 and $67,874,935 in 1935.

The increased production of consumers' goods using synthetic aromatics in 1939 over previous years, together with the expanded output of synthetic aromatics since 1939, emphasizes the optimistic outlook for an even larger production and consumption of synthetic flavors and perfume materials in the post-war era.

OUTLOOK FAVORABLE

During the past quarter century the manufacture of synthetic aromatic chemicals in the United States has grown remarkably and, in that time, the country has become independent of foreign sources of supply. Synthetic aromatics manufactured today are tried and true products. Their increased use by perfumers and by the food industries has been a gradual development. The selling movement, initiated a number of years ago on the novel slogan "Sell by Smell," has also contributed to their increased consumption as has their employment as deodorants and reodorants.

The present conflict has stimulated a greater interest in synthetic aromatics, and scientific and technological advances made during the war regarding the manufacture, as well as the proved worth of these products, in new and unique formulations, will undoubtedly bring about an even broader consumer demand for them and a correspondingly larger consumption in the post-war years.

Michigan Beverage Bill

A bill is now pending in Michigan to regulate the manufacture, bottling and sale of soft drinks, syrups, extracts, etc., which in part amends the State Soft Drink Act of 1919.

It provides that each plant be licensed 60 days prior to the operation of the plant. Applications must be accompanied with a fee ranging from $25.00 to $100.00 depending upon the capacity of the plant. Licenses must be accompanied with a registration of each soft drink or other non-alcoholic beverage to be produced in the plant.

Soft drinks, fruit juices, or other non-alcoholic beverages not manufactured within the state must, before sale, be inspected and registered with the Department of Agriculture. The inspection fee ranges from $25.00 to $100.00, depending upon volume. Both this registration and the one for beverages manufactured within the state expire on the 30th of June of each year.

Persons and firms offering these products for sale must register the same, and the name and address of the manufacturer with the Commissioner of Agriculture. At the time of registration, an inspection fee of $5.00 shall be paid for each beverage. This registration expires on December 31. A renewal fee of $1.00 is charged.

The Commissioner of Agriculture is to have the power to revoke a license when it is determined that any provisions of the act have been violated. Before revoking any license the registrant is entitled to present evidence to the Commissioner. If the license is revoked the registrant may appeal to the circuit court of the county where he resides, or in the circuit court of Ingham County.

Whenever artificial colors or flavors are used the label or crown of the container must indicate their presence.

Bottles or containers shall be sterilized by soaking in a hot caustic solution, not under 120° F., for not less than 5 minutes; then thoroughly rinsed in pure water until free of alkali. Containers of 1-gallon capacity may be sterilized by any means approved by the Commissioner of Agriculture.

All buildings must be well lighted and ventilated, and all buildings and machinery used in the manufacture of beverages shall be kept in a sanitary condition.

Sugar Rationing

The OPA has announced that a five per cent reduction in sugar allotment is necessary to keep distribution within 1,400,000 tons for civilians during the second quarter. All classes of industrial users, except ice cream and preserves manufacturers, will be affected. This will mean that many manufacturers will receive the smallest allotment so far granted them.

The

CAMAX COMPANY

IMPORTERS

OF ALL VARIETIES OF

VANILLA BEANS

Formerly M. Cortizas Company

1316 Arch Street, Philadelphia 7, Pa.

Telephone RITtenhouse 1656

JOSEPH R. MAXWELL, President

Formerly Chief Chemist, Stephen F. Whitman & Son, Inc.

Cable Address, GALGICA
Codes: Bentley's,
2nd Phase & Private

SOAPS

Theoretical Aspects of Soap Manufacture

A certain surplus of alkali must be present during the entire saponification process . . . Microscopic examination shows so-called isotropic phases in which crystals can be observed

by A. DAVIDSOHN

THIS article shall deal with theoretical aspects in a way that everybody working in the soap industry will be able to understand. As a matter of fact, it will be impossible to give a complete picture of the theory of soap boiling and detergent action, but some ideas of the problems involved will be given within the framework of this article.

SAPONIFICATION PROCESS OUTLINED

First we have to deal with the process of saponifaction in an aqueous medium (the saponification in a non-aqueous medium is relatively unimportant as the common saponification process occurs in water). It is well known that in starting to boil a soap, a certain amount of water is added to the fat mixture into the soappan, followed by the addition of only a fraction of the amount of caustic lye necessary for full saponification. The reason for this procedure is simply this: It is advantageous to emulsify the fats first through the formation of a small amount of soap by the reaction of the free fatty acids in the fat with the alkali present, resulting in accelerated saponification. Now, if too much caustic alkali were present in the beginning, this primarily formed soap—the emulsifying agent for the fat in the aqueous solution of caustic alkali—would be "salted out" and thus the effect of the emulsifier would be disturbed.

EXCESS OF ALKALI HARMFUL

Emulsification, or dispersion of the fat globules throughout the aqueous phase, is the most important factor in the first phase of the saponification process, as saponification starts at the oil-water interfaces. From this it is easy to understand that other emulsifying agents (e.g. clay emulsifiers[1]) and certain aromatic hydrocarbons[2] have an accelerating effect as well. A very important paper about the action of soap as emulsifying agent during the saponification was published by *McBain* and *Kawakami*[3]. It was found that emulsification is dependent on the character of the hydrocarbon chains of the oils and fats to be saponified, and that neat soap is the best emulsifying agent itself. *Speers* and others[4] observed the actual rate of saponification of arachis oil and found quite naturally that the velocity of saponification increased with the degree of dispersion of the oil, with the increase in volume of the oil phase, and with increase in the quantity of arachis oil soap as emulsifier. They found that an excess of alkali was harmful, as it causes the destruction of the emulsion.

LYE DISPERSION IN BOILING

Once enough soap is formed, the process of saponification becomes so rapid, that often the whole amount of caustic lye added in the beginning of the boiling process is used up, and the contents of the pan becomes a nasty mixture of lumps. Thus, it is highly important that during the whole process of saponification a certain surplus (not too much, as pointed out above) of alkali must be present in the pan. What is the explanation for this? If, as it was supposed during a very long period, up to 1932 the whole process of saponification up to the very end proceeds at the fat-water interfaces, this sudden change in the velocity of saponification could not be explained. The sudden rise in velocity at a certain stage and the further relatively fast and easy saponification of the remainder of the fat need a special explanation.

This explanation was furnished by the theory of *Lester Smith*[5] which shall be described in a condensed form now[6]. Fats as well as caustic soda are soluble in soap, whether the latter is in aqueous solution, or is in the form of either neat or curd soap. *Lester Smith* concluded that, after an initial period of slow interfacial reaction, saponification occurs mainly in homogeneous solution in the soap phase.

This view accounts for the autocatalytic nature of the reaction, since the medium of the rapid homogeneous action is itself a product of the process. The initial sluggish phase of saponification (the interfacial phase) can be reduced or eliminated not only by the addition of soap or free fatty acid, but also by a small proportion of alcohol, which probably renders the soap a better solvent for the fat. These views also explain the completeness of saponification by the "*cold process.*" During soap-boiling, the concentration of electrolyte is usually adjusted, so that the soap in the pan is present as "neat soap," which in consequence acts as the solvent medium, in which most of the fat saponification takes place.

SALTING-OUT PROCESS

We have now said something about the electrolyte concentration. This leads us straight to the process of salting out. In short terms the salting out is necessary for the soaps electrolyte (usually common salt) on the concentrated soap solution in the pan, coagulating or graining out the soap on nigre or lye.

The higher the molecular weight of the fatty acids used for the soap, the less electrolyte is necessary for the salting out. The soaps of the unsaturated fatty acids need more electrolyte than the corresponding soaps from the saturated fatty acids, e.g., sodium oleate more than sodium stearate. Much more electrolyte for salting out is necessary for the soaps of fatty acids with hydroxyl groups. Thus the soap made from castor oil cannot be salted out with workable concentrations of electrolyte (a concentration of about 26 per cent NaOH would be necessary). In the manufacture of soap, mixtures of fatty acids are present, and the amount of electrolyte corresponds to the mixture. The following table gives the threshold concentration of different electrolytes. The threshold concentration according to *Merklen*, is that concentration of electrolyte in aqueous solution, in which the soap cannot be redissolved, and it is a characteristic constant for the soaps of different fatty acids and the electrolyte in question.

Soap	Electrolyte	Threshold Concentration in Percentage
Soap from coconut oil	Na OH	19,1
Soap from coconut oil	KOH	26.1
Soap from coconut oil	NaCl	24,0
Soap from palm kernel oil	NaCH	14,2
Soap from palm kernel oil	KOH	19,8
Soap from palm kernel oil	Na Cl	20,1
Soap from palm kernel oil	K Cl	25,0
Soap from tallow	Na OH	5,1
Soap from tallow	K O H	7,2
Soap from tallow	Na Cl	5,4
Soap from tallow	K Cl	13,6
Soap from tallow	$Na_2 CO_3$	17,7
Soap from tallow	$Na_2 SO_4$	18,0

The table refers to complete salting out of the soap on spent lye. If the concentration of the electrolyte is not sufficient for complete salting out, another system may develop, e.g., the system soap-nigre, which process of partial salting out is very often used during the soap-boiling process. In this case three phases can be observed: soap, nigre and lye.

MICROSCOPIC OBSERVATIONS

The changes during saponification and salting out were actually observed under the microscope. Something about these observations and conclusions must be said here. It is interesting to note that in some way the principles of these investigations are along lines very similar to tests made by many soap-boilers at the pan. Small samples are withdrawn by the soap-boiler during the soap-boiling and salting-out process, and their structure is observed on glass slides. What the soap-boiler sees on the slide with the naked eye, *MacLennan* observed under the microscope, keeping the slides at a temperature near to the temperature of the pan.[7]

It was found, under the microscope, that during the soap-boiling process different phases could be observed, so-called isotropic phases (ordinary solution) and anisotropic phases, in which fluid crystals could be observed. (Anisotropic material shows double refraction when examined in a polarizing microscope, permitting light to pass through crossed Nicol prisms and thus appearing bright. Isotropic material appears dark under the polarizing microscope.) These anisotropic qualities of soap will be important later, when the action of soap as a detergent shall be explained. *McBain* (1925) studied the different phases of soap-boiling and established the fact that the anisotropic and isotropic soap-solutions are actually separate immiscible phases. Besides it was established by *McBain* that another anisotropic fluid crystalline soap may come into existence in medium concentrations. The different fields in which two phases of varying compositions can co-exist are[8]:

A. "Middle soap" and isotropic solution—not definitely recognized in practice.

B. "Middle soap" and "neat soap" —not definitely recognized in practice.

C. "Neat soap" and curd fibres—not normally present in the pan, but occurring during soap-cooling in frames.

D. "Neat soap" and isotropic solution (nigre)—the normal state of affairs in the pan during "fitting."

E. "Neat soap" and isotropic solution (lye)—the normal condition during graining out with salt, but just prior to the actual formation of soap curd.

F. Nigre and lye—a small region, not often encountered during the soap-boiling process, in which isotropic solution can separate into these two phases.[9]

G. Soap curd and isotropic solution (lye)—the normal condition of a soap charge which has been fully grained out.

It must be noted that *MacLennan* studied the structure of various commercial soaps under the polarizing microscope. Genuine household soap usually shows crystalline fragments embedded in more or less systematically oriented fibres. When heating such soap, it becomes more aniso-

Soap making is an exacting science

tropic, the fibres disappearing at about 60-90°C.

Filled soaps are similar to common household soap, but are filled with higher percentages of silicate. This acts together with soap fibres as a kind of flux for globules of solidified crystalline soap.

Soft soaps are usually fluid crystals embedded in isotropic soap solution.

Only transparent soaps from alcoholic solution appeared completely isotropic and are classified as solidified soap gels.

COLD PROCESS EXPLAINED

Until now we have spoken about the boiling of soap. But there is another process to consider, which is not only of practical importance, but of theoretical importance as well——the cold process. The cold process was mentioned above, when the theory of *Lester Smith* was described, but there are more theoretical implications in this process. The theory of *Lester Smith* explains very well—the cold process. The cold process, namely, the complete saponification of the fat after the first phase is accomplished: the production of the intimate emulsion of the caustic lye in the fat. It is well known that a complete saponification in the second phase of the cold process depends on an intimate emulsification in the first phase, which is a mixing together of the necessary amount (or slightly less caustic lye than necessary for complete saponification of the fat) of concentrated 38° Bé caustic soda lye with the fat.[10] This is brought about by suitable mixers, crutchers, etc., and is helped to a great extent by the presence of a certain percentage of free fatty acids in the fat. With these fatty acids soap is formed immediately. This soap acts as an emulsifying agent for the lye in the oil.

The dispersion of the lye becomes finer, and the surface, on which saponification may proceed, becomes larger until the stage of a stable and thick emulsion is reached, which is the beginning of the second phase, in which heat is produced by the exothermic process of saponification, which proceeds along the lines shown by *Lester Smith*. If it is supposed that in the first phase we have an emulsion or suspension of the type water- (in this case the caustic lye) in-oil, we may see that the formula of *Stokes* gives a hint for further explanation. Then it becomes clear that the viscosity of the fat to be saponified is very important for a speedy saponification process, as well as the size of the lye particles dispersed in the fat. In fact, if castor oil is saponified with caustic potash[11] by cold process, the viscosity of the castor oil helps, to a great extent, the dispersion of the lye particles, and prevents the sedimentation of these particles. Now using *Stokes'* law for the constant medium (oil), the velocity of descension of the caustic lye globules varies directly as the square of their radius. The Stokes' equation is:

$$V = \frac{2r^2(\alpha - \alpha')g}{9\eta}$$

where V = constant velocity of dispersed phase (lye globules) in cm./sec.
r = radius of globules (caustic lye)
α = density of dispersed phase (caustic lye)
α' = density of medium (fat)
η = viscosity of medium (fat)
g = gravity constant

From this formula it is easy to see how the different factors are important for the first phase of the cold process saponification. The factors most important in lowering the velocity of descension ($\sqrt{}$) are a very small radius (γ) of the caustic lye particles dispersed in the oil, and the viscosity of the oil (η). It shall not be overlooked that in the case of "cold saponification" of castor oil, other factors also help toward a quick saponification of the hydroxyl-groups of the castor oil fatty acids. I want to point out that the control of the viscosity of the different phases of the whole system during cold process saponification and during soap boiling would be very interesting indeed.

[1] Langton, *J. Oil Colour Chemists Assoc.*, 1922. p. 41, *J. Soc. Chem. Ind.* 1923, 51 T.
[2] Roshdestvenskii, *Seifensieder-Zeitung*, 1928, 155, 166.
[3] *J. Phys. Chem.*, 1930, **34**, p. 580.
[4] *J. Chem. Phys*, 1933, **30**, 414, see also W. Clayton, *Emulsions and Their Technical Treatment*, London 1943, p. 71-75.
[5] *J. Phys. Chem.*, 1932, **36**, p. 1401, 1612, 2455, *Chem. Ind.*, 1939, p. 87.
[6] Hilditch, *Industrial Fats and Waxes*, 2nd Ed., 1941, p. 350.
[7] *Journ. Soc. Chem. Ind.*, 1923, **42**, p. 393, T.
[8] Hilditch, *Industrial Fats and Waxes*.
[9] As I pointed out above, three phases very frequently occur during soap-boiling: partly salted out, soap nigre, and lye. This is, according to my experiences, very often the case when salting out "soap on nigre."
[10] *J. Davidsohn* and *A. Davidsohn*, Cold Process Soap, Soap, Perfumery & Cosmetics, 1938, p. 601.
[11] The special structure of pure sodium castor oil soap disturbs this picture. Thus, the experiment must be carried out with caustic potash lye. Besides, I want to mention here, that potassium castor oil soap has especially good qualities for making transparent soap flakes with a smooth silky surface. 1% of potassium castor oil soap added to soap flakes during the milling process is quite effective in this sense.

by ARNOLD KRUCKMAN

THE tube Order, M-115, finally was validated on April 2, reducing the use of lead tubes by dentifrice manufacturers to 20 per cent of the volume of lead used last year during the same quarter. This means the actual allocation is based on poundage of lead, not on tube units. Tubes are made more efficiently and with less lead, and it is assumed here the saving in lead, and other economies, will actually give the user of tubes about 30 per cent of the units he received last year during the same quarter. In addition, if he can find them, he is entitled to acquire aluminum tubes to the extent of 25 per cent of all tubes he used during the same period last year. This percentage for civilian use will be based on the total of tubes of all kinds used as containers for civilian and military inventories. Shaving cream may not be put in lead tubes. However, if aluminum tubes can be obtained, shaving cream manufacturers are permitted to acquire them to the extent of 25 per cent of the number of units used during the same quarter last year. Brushless shaving cream may not be contained in lead tubes, and may not be put in aluminum tubes except cream to be sold through Army Post Exchanges and Navy Ships' Service Stores in the United States "and the District of Columbia." Depilatories also are permitted to use 25 per cent in aluminum of the number of tubes permitted last year, during the same quarter.

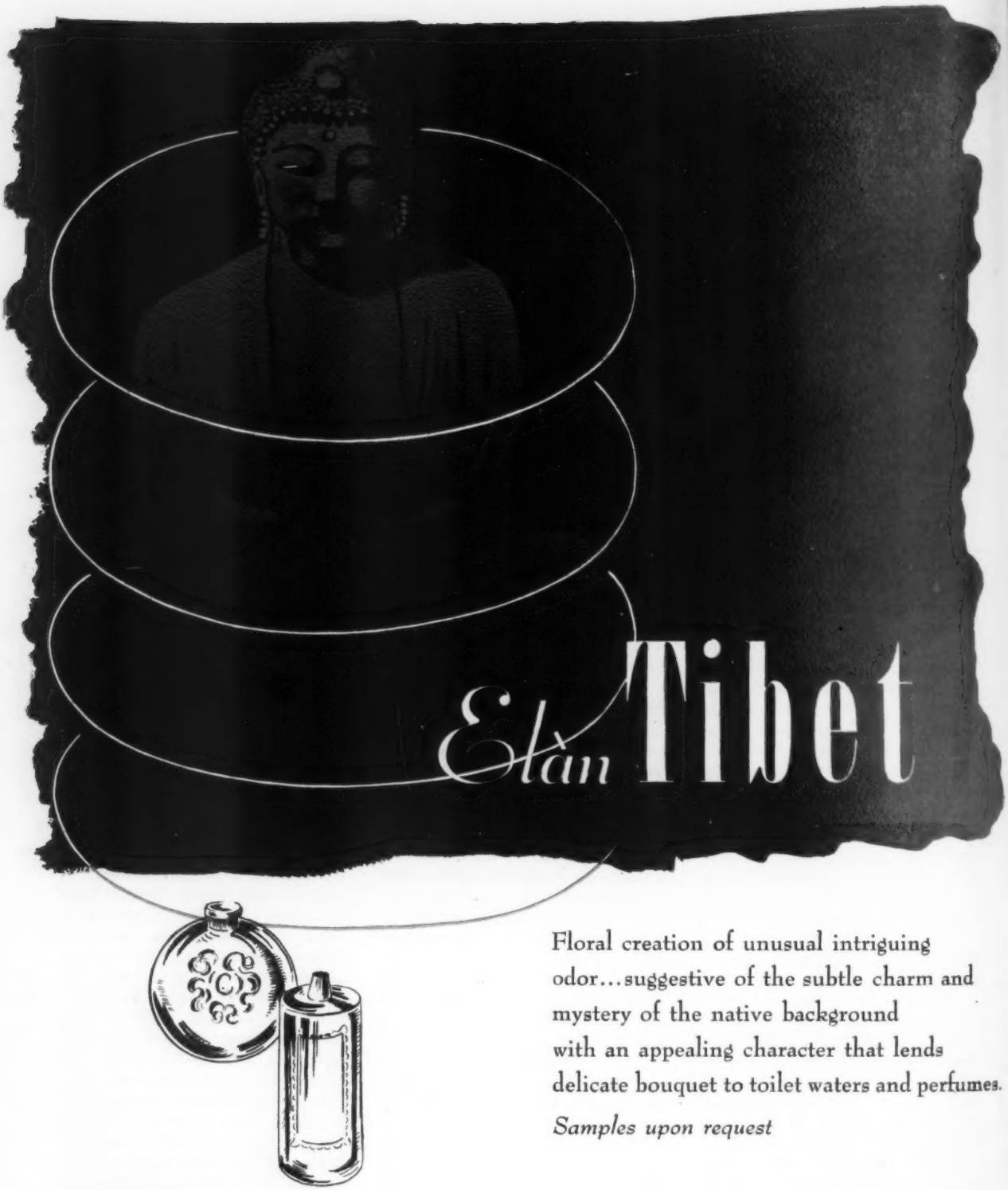
The Order specially exempts tubes in process of manufacture before March 31, 1945. The exemption ceases on that date except so far as blanks are concerned. Tube manufacturers, who have blanks on hand, destined for anyone eligible to use lead tubes before the amended Order went into effect on April 1, are permitted to complete the processing of the blanks into tubes, and may deliver them to the cosmetic manufacturer who may have ordered them, after March 31, 1945. There also is a small order exemption which may save many smaller cosmetic and toiletries manufacturers from distress.

OVERSTOCKING CURBED

Any manufacturer of cosmetics and creams, or any other products eligible to be contained in lead tubes last year, and who used not more than 100 gross of tubes, may apply for the same number of gross as last year under the exemption. This modification obviously applies solely to those who came under the 100-gross limitation last year. Others, no matter how many tubes they use, are free to acquire any tubes they may be able to find which do not come under any of these restrictions. If you can find tubes of any kind, of odd sizes, or embellished with lithographs or printed labels, and you wish to purchase them, there is nothing in the Order which prohibits the action. Also you are free to buy any tubes in process of production which you may be able to obtain from the manufacturers. In order to make sure that there is no monthly overstocking of inventories, WPB issued a special Amendment to M-115 restricting the acquisition of tubes during April to one-third of total quantity to which the user may be entitled during the second quarter of 1945. At the same time WPB issued a directive qualifying Order L-103-b which prohibits the use of aluminum closures for all containers for cosmetic and toiletries products. However, aluminum foil may be used as liners for closures.

LEAD SHORTAGE CONTINUES

Elmer Tysdal, Chief of the Cosmetics Section of the Chemicals Bureau of WPB, and his associates, are reported to have made a strenuous effort to secure more liberal treatment for the cosmetics and toiletries industry; the problem was taken up to the top. But Director Krug made clear that conservation of lead is a matter of over-all WPB policy. It is one of the most critical materials in the war inventory. The supply is acutely short and is growing more scarce daily. Production has shrunken alarmingly, owing to earlier price difficulties, and to lack of manpower. Salvage, which might act as an offset, has been involved with so many headaches that it has not been the relief which would seem logical. Batteries, for instance, which contain substantial quantities of convertible lead, have been hard to collect because they are cumbersome to handle, and the salvage prices have not been attractive. The pinch of the lead stockpile is reflected in the recent announcement that not more than 1,100 tons of lead will be available for collapsible tubes, of which only 370 tons have actually been made available during April. It is not known what modifications may be imposed in May and June. It is hoped clarification will come out of the meeting of the requirements committee in



Floral creation of unusual intriguing odor... suggestive of the subtle charm and mystery of the native background with an appealing character that lends delicate bouquet to toilet waters and perfumes.

Samples upon request

Florasynth LABORATORIES, INC.

CHICAGO 6 · NEW YORK 61 · LOS ANGELES 27

DALLAS 1 • DETROIT 2 • MEMPHIS 1 • MINNEAPOLIS 2 • NEW ORLEANS 13 • ST. LOUIS 2 • SAN FRANCISCO 3 • SEATTLE 4

Florasynth Labs. (Canada) Ltd. — Montreal • Toronto • Vancouver • Winnipeg Florasynth Laboratories de Mexico S. A. — Mexico City

the latter part of April. There also is some hope that the supply may be increased by sending more manpower to primary and secondary lead smelters. Tin is in even worse situation because less than 75 per cent of the military needs are supplied from South America, the only present source. Stockpiles are dwindling dangerously, and there is no immediate prospect that more pig tin may be expected from Malaysia and the East Indies, which before the war supplied us with over 90 per cent of our tin.

ALCOHOL SITUATION

The welcome word from the Chemicals Bureau is that the cosmetic and toiletries industry has been awarded a generous supply of isopropyl alcohol for April. It will be able to acquire approximately three-quarters of what it wants in 91 per cent isopropyl. Although fixed solely on a monthly allocation, there are some reasons to feel that the supply may be continued during May, possibly June. Ethyl alcohol for industrial uses, such as toiletries and cosmetics, roughly has been reduced by 10 per cent for April, but is expected to be more plentiful in May. Stearic acid has been brought under tighter control by WFO 129 which requires that it may be used only when certified. It is not certified for cosmetic uses. This means that the cosmetic industry will be expected to scramble with others for whatever is left over from the needs of certified users. Red oil is controlled by WFO 53, which is regulated by controls identical with the Stearic Acid Order. Practically the same limitations are placed on Oleic acid. There will be no lanolin for April, and there appears to be very little hope that any will be available for May. WFO 87 revives the controls over fatty acids.

All fats and oils are scarcer, and soaps have virtually been placed under the limitation that prevailed at the most critical period in the period of fats and oils scarcity. The Government predicts less than it expected a month ago. The scarcity is expected to increase for six months. Soap fats are reported at least 150,000,000 pounds less than last year. Use of civilian soap has been reduced 5 per cent, and is expected to be scheduled for another cut. Military demands are exceptionally heavy, and there are urgent demands from the military for fats and oils to be distributed in certain areas of Europe. Lend-lease and relief exports are very high. The over-all cut on soaps aggregates roughly 20 per cent.

Domestic lemon oil continues scarce. The product brought from Sicily is expected to be allocated wholly to the armed forces. Citric acid has been cut to 30 per cent for use by civilian industries. The supply of mint is not regarded as sufficient for the requirements ahead. A. L. Kalish, Chief, Essential Oils Section, WFA, anticipates the crop reports will be received not later than June 10. The roots have been buried under snow longer than normal, which makes the prospects of the crops uncertain at this time. Mint farmers also have been plagued by manpower troubles. There are sound reasons for hoping that the production may become more normal, and that the situation in Brazil may be favorable, which would relieve the pressure. Department of Agriculture reports optimistically upon the prospects of allspice, product of the Caribbean, which it calls the all-American. Its use apparently is growing decidedly in the absence of similar flavoring materials from the Far East. Foreign imports of olive oil became more substantial late last year. OPA found that foreign exporters were inclined to take ceiling prices within the United States as the sales price abroad. In addition, industrial importers offered higher prices than the importers who bought for resale. The uncomfortable squeeze on Americans caused the OPA to set a price of $4.30 per gallon, cost and freight. The price applies to shipments at the ports of arrival. All grades are included, but the price does not embrace war risk, marine insurance, or U. S. duties. Contracts accompanied by irrevocable letters of credit with definite expiration dates are exempt if contracts were made before March 24.

PAPER SCARCITY

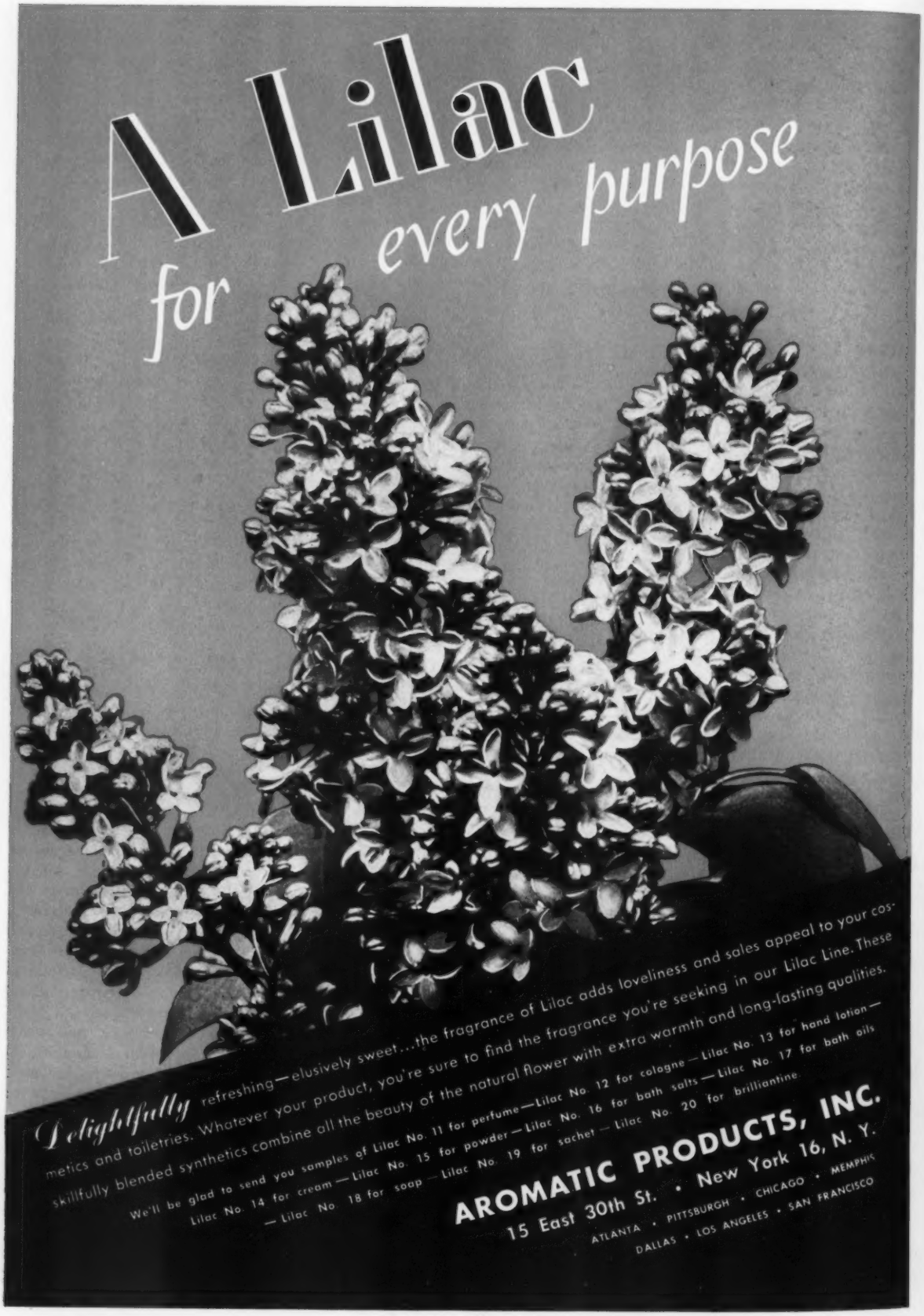
Paper boxes as well as paper in other commodities, used by the cosmetic and toiletries industry, is steadily becoming scarcer. Under M-290, preferences are given to rated orders. The cosmetic and toiletries industry is restricted to the use of AA5 which has almost no value at this time. Efforts to secure a better rating have thus far been ineffective. The industry which makes the boxes operates with relatively few employees. The recent squeeze on manpower has hit this box industry harder than some others. The loss of men in the plants has made the burden of replacement extremely difficult. In addition, they have found it increasingly hard to obtain paper from the manufacturing plants which operate from 80 per cent to 90 per cent on war work. The bright spot in the supply of containers is the relative freedom in production of bottles and closures. Production figures compare favorably with periods when there was not such emphasis on war work. It is reported that the supply of plastic closures has improved, and that the improvement is expected to continue during April. Paperboard, used in fiber shipping containers, is much tighter. It is now one of the most critical items in the war schedule. The situation has led WPB to compel rigid compliance with Order L-317. A number of violations in use of the paper have met with drastic penalties.

NEW DUTIES ON IMPORTED JARS

HR 2795 would impose new duties on imported bottles, jars, and vials used for perfume, talcum, toilet water, or other toilet preparations. If produced by automatic machines, the duty is to be fixed at 25 per cent of the value of the container; if otherwise produced, 75 per cent of the value. The stoppers, or covers, ground-glass or otherwise, do not affect the duty to be imposed. The bill is now up for consideration by the House Committee on Ways and Means. The Department of Commerce has made a special effort to draw attention to improper packing and shipping, particularly of materials such as chemicals, and products which include fluid products in the cosmetic and toiletries industry. It has fostered national interest in the nation-wide "perfect shipping" campaign which begins in April under the auspices of the National Association of Shippers Advisory Boards.

ICE CREAM FLAVORS

Army Quartermaster has recently told the correspondents about his preparations to supply the soldiers


A Lilac
for every purpose
Delightfully refreshing—elusively sweet...the fragrance of Lilac adds loveliness and sales appeal to your cosmetics and toiletries. Whatever your product, you're sure to find the fragrance you're seeking in our Lilac Line. These skillfully blended synthetics combine all the beauty of the natural flower with extra warmth and long-lasting qualities.
We'll be glad to send you samples of Lilac No. 11 for perfume—Lilac No. 12 for cologne—Lilac No. 13 for hand lotion—Lilac No. 14 for cream—Lilac No. 15 for powder—Lilac No. 16 for bath salts—Lilac No. 17 for bath oils—Lilac No. 18 for soap—Lilac No. 19 for sachet—Lilac No. 20 for brilliantine.
AROMATIC PRODUCTS, INC.
15 East 30th St. • New York 16, N. Y.
ATLANTA • PITTSBURGH • CHICAGO • MEMPHIS
DALLAS • LOS ANGELES • SAN FRANCISCO

in the field and elsewhere with more variety in ice cream flavors. Ice cream mix is usually supplied in vanilla flavor only. Recent developments make it possible to supply powders which may be added, consisting mostly of dehydrated fruit juices. These give the flavor of lemon, fruit cocktail, peach, coffee, maple, pineapple, chocolate, and hard candy. The latter is especially popular. Ice cream is one of the foods highest on the list overseas for morale as well as for nutritive food. The Quartermaster also has lately shown us here a new kitchen spice kit used even in combat areas. It has nineteen items packed in metal containers. Among them are cinnamon, cloves, synthetic lemon powder, maple tablets, nutmeg, paprika, sage, black pepper, and vanilla tablets. The items are either ground and concentrated, or are dehydrated. The kit is enclosed in a fibreboard box, 13½ inches by 10⅜ inches by 8 7/16 inches, the metal containers separated by corrugated fibreboard.

BARBER'S REPORT

Lester A. Barber returned from France by air late in March. He has not been seen here, yet, except at a meeting in the offices of the U. S. Commercial Company with officials of the Foreign Economic Administration. He has been kept under wraps in order that he might produce his over-all report before he meets either the correspondents or representatives of the trade. Chief T. W. Delehanty, of the Drugs and Pharmaceutical Section, Department of Commerce, reports that Barber has returned to his old post in the Section, as Assistant Chief. There was considerable speculation in Washington about whether Barber would stay with the Department of State, or join the FEA, or go back to the Department of Commerce.

Gerald Strauss, who went to France to buy essential oils for American importers, is still in or about Paris. It is reported that Strauss in March attended a meeting held presumably in Paris which was attended also by representatives of the Governments of Britain, France, and, it is said, Russia, to discuss the division of the essential oils which might be made available by the French growers and producers. A member of the British Commission in Washington is reported to have flown to Europe for the conference. A number of rumored results are reported here, but no specific and dependable information is available.

Lt. Col. Ralph W. Olmstead, of the Combined Food Board, and a major executive of the WFA, has been detached from service here and sent to Europe to handle relief feeding in Germany. It is not yet known who will succeed him on the Combined Food Board and in WFA. Incidentally, five more ships have been added to the fleet of 26 already allocated to carry war supplies and food to France under the auspices of FEA. It is reported over 15 ships are already in transit and will bring many products of France back to America, including essential oils. The transactions are conducted under a special industry-wide license provided by the Treasury Department. It also is reported a Turkish delegation, which has visited England, will arive here in April. It comes to negotiate the procurement of millions of dollars of equipment and supplies, and is expected to dispose of Turkish commodities, including essential oils.

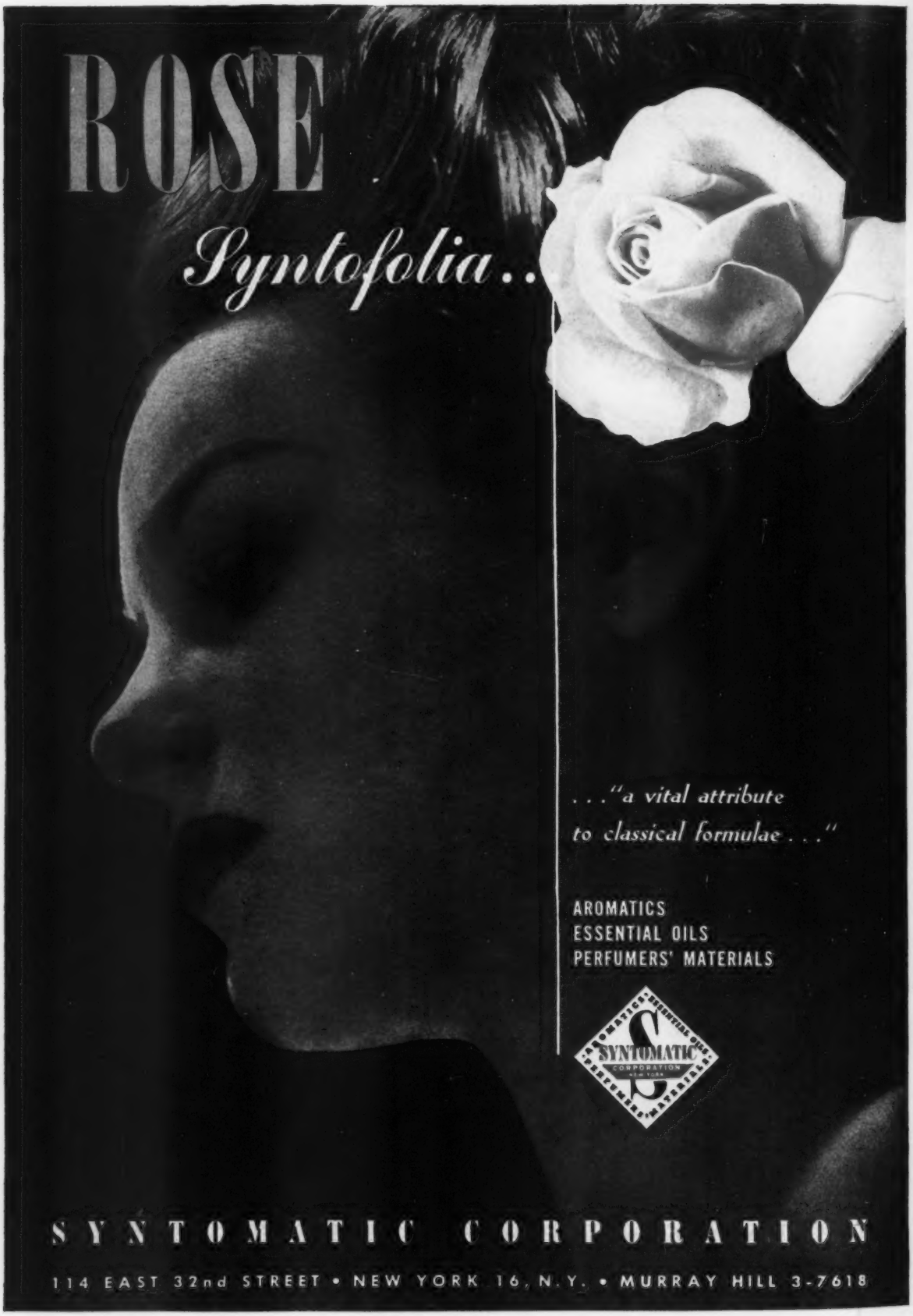
U. S. LEADERSHIP

It is not revealing a secret to report that here it is felt that the American industry no longer expects to look to the French for leadership in producing and popularizing perfumes and other cosmetics. The people here report that the toiletries and cosmetic industry will follow the lead of the American designers who no longer are dependent on France for fashion leadership. Here in Washington it is believed the war measures have prompted the American industrialists to efforts of imagination which provide products much more in harmony with American demands. They think American producers have demonstrated extraordinary resourcefulness, and have evolved a closer liaison between those who form the backbone of the industry and the producers, and that they have brought out beauty and dramatic values in products and containers that strikingly represent America to the world. There is no inclination here to deny that French production and materials will be highly influential, because the French economy is built on such industry, and the French Government has pledged its assistance to the luxury industries. The feeling here is that France will not be the dictator in these activities in the same sense that it was before the war. As Miss Mary E. Poole of the Industrial Projects Unit, Department of Commerce puts it: "People have acquired a fashion intelligence which should encourage them to select those things that reveal a purpose in the American mode of life."

V-E DAY

Justice Byrnes' retirement from the Washington picture locally is not regarded as merely an indication of the near approach of V-E Day, but it is assumed to be his reluctance to participate in the program, or lack of program, that may come whenever V-E Day really arrives. No one here is ready to define V-E Day. Most estimates give the Germans another two months of fighting in a big way. Thereafter they will undoubtedly crumble as an organized Government; but it is not anticipated that this deterioration will mean that they will abandon their guerrilla warfare. There is here much serious consideration of the werewolf type of marauding. It might cause the reorganization of occupied Germany to go slowly because the Germans from whom we might expect aid will fear the reprisals of these murderous bands, not only for themselves but for their relatives. The whole prospect of V-E Day is therefore still a problem.

In sober quarters the general idea seems to be that there will be a period of confusion because there will be an undirected scramble to get into civilian production. This is not expected to last long, possibly from four to six months. The general assumption is that the country will then be in a mood to welcome help from the Federal Government in getting some order out of the confusion, and that whatever reconversion plans are susceptible of being initiated will then be put in operation under Government leadership. The program will naturally come out of the War Mobilization and Reconversion Board. This organization has worked on a plan, subject to Executive approval. Apparently no one yet knows just what the plan, in its details and entirety, may be. Nor is it known when it may be revealed.


ROSE
Syntofolia..
. . . "a vital attribute
to classical formulae . . ."
AROMATICS
ESSENTIAL OILS
PERFUMERS' MATERIALS
SYNTOMATIC
CORPORATION
SYNTOMATIC CORPORATION
114 EAST 32nd STREET • NEW YORK 16, N.Y. • MURRAY HILL 3-7618

NEW PRODUCTS AND PROCESSES

Rubber Cement

Non-thermoplastic, water and aromatic oil-resistant, a new rubber cement called Plastilock 500, for bonding metals, wood, plastics and ceramic materials to themselves or to each other has been developed by the B. F. Goodrich Co. Claiming superior bonding qualities in any of its applications for the product and that in some cases it can be used in place of rivets and screws, the company advises that best results are gained by applying heat with pressure, although heating alone will give some degree of adhesion.

Kriegr-O-Dip Now Liquid

The Krieger Color & Chemical Co. announces that "Kriegr-O-Dip W" dyes are now available to the plastic industry in a highly concentrated liquid form, replacing the old powder type. Approximately one gallon of concentrate makes between eight and ten and one half gallons of dye solution. The product is used in dyeing Lucite, Plexiglas, polyvinyl chloride, acetate, and other plastic materials. A comprehensive booklet may be obtained upon request.

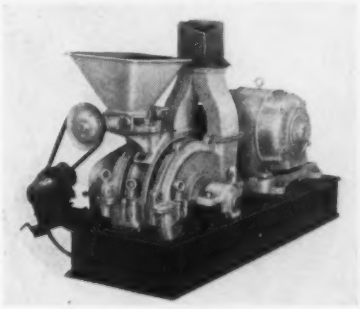
Pulverizer for Fine Powder

A mechanical, screenless pulverizer for the production of ultra-fine powders, from 1 to 25 microns, has been announced by the Pulverizing Machinery Co.

Its principle of operation is simple. The raw material is fed in through a conventional hopper. After it is broken down by rotating hammers it is fed by air into a separator wheel, where it is whirled at a rate of 4,000 to 7,000 r.p.m.

A fan adjacent to the separator wheel exerts enough suction to draw out the finest particles and discharge them. Coarser particles resist the pull of the fan because of centrifugal force, and drop back into the path of the hammers where they are beaten again until they are fine enough to respond to the pull of the fan.

The relationship between the radius and width of the separator wheels



Mikro-Atomizer

and the radius and width of the fan blades determines the fineness and capacity of the machine on any given material.

This equipment, which is reported to give a cool operation, is offered to manufacturers who require an ultra-fine powder.

Assembly Supports

The Fisher Scientific Co. has made available a new Flexaframe to be used in laboratories to support various parts of an apparatus in one firm unit. It is the fourth, and largest, of the frames offered by the company. The frame, four feet by six feet, is a wall type, assembled from interchangeable parts.

New Floor Cleaner

The Empire Chemical Products Co. has placed on the market a new liquid cleaner. The makers claim that it is effective for all types of floors. The product is made from a vegetable oil and has a high soap content. When washed off after scrubbing, its makers state, it acts as a filler.

Catalogs

Manufacturers with export packaging problems will be interested in a new booklet entitled "Arrived O.K.," which has been announced by the Minnesota Mining and Manufacturing Co. In addition to information on adhesives, the booklet uses photographs to illustrate operations in sealing fibreboard and V-board containers and waterproof liners for export shipment. Free copies are available.

The Department of Labor has issued a bulletin, "Improvement of Labor-Utilization Procedures," which should be of value to employers who are searching for an improvement in this field.

Copies may be obtained for ten cents through the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Schimmel & Co., Inc., New York, N. Y., has issued a new price list.

The Office of Alien Property Custodian offers U. S. citizens an opportunity to benefit through enemy research, as represented by alien patents. These patents, numbering some 45,000, were seized at the outbreak of war. Licenses are now available under most of them for an administration fee of $15.00. A complete set of 8,000 chemical abstracts is available for $25.00. Short descriptions and drawings of 37,000 mechanical and electrical patents may be obtained for the same price. Inquiries should be directed to the Office of Alien Property Custodian, Chicago 3, Ill.

Book Review

STATE ADVERTISING LEGISLATION, Burt W. Roper, 302 pages. Not illustrated. Printer's Ink Publishing Co., Inc., New York, N. Y. Price $2.50.

This book is designed for the working executive who wants concise information on advertising regulations in the individual states. It covers a variety of subjects in a condensed manner.

Golden Anniversary Jubilee
M&R MAGNUS
1895-1945

A
HALF CENTURY
OF SERVICE

Since 1895

One of the World's Great Suppliers of

ESSENTIAL OILS

BALSAMS • CONCENTRATED FLAVORS
BASIC PERFUME MATERIALS

A Tribute to the Memory of a Man ..

"Give generously of your capabilities, and you will receive with equal generosity."—*Percy Cecil Magnus.*

(Excerpt from a letter written to his sons by the late Percy Cecil Magnus, founder of MAGNUS, MABEE & REYNARD, Inc.)

MAGNUS, MABEE & REYNARD, INC.

16 DESBROSSES STREET, NEW YORK CITY • 221 NORTH LASALLE STREET, CHICAGO

San Francisco: Braun-Knecht-Heimann-Co. • Los Angeles: Braun Corp. • Seattle, Portland, Spokane: Van Waters & Rogers, Inc. • Canada: Richardson Agencies, Ltd., Toronto

AMONG OUR FRIENDS

▸ Lieut. Louis Romani, of the staff of Aromatic Products, Inc., New York, N. Y., is home on rotation after brilliant service in Europe for three years. He entered the army in October, 1941, where he was assigned to a tank destroyer unit at Fort Knox and in 1942 he was sent to North Ireland to train for the invasion of North Africa. Among the "firsts" in the war, Lieut. Romani has many to his credit: He was in the first wave to land in North Africa; he was among the first troops in Tunisia; and with the first American tank destroyers in combat. He was also the first enlisted man in his outfit to be promoted on the field of battle to the rank of second lieutenant. Outside of Tunis he destroyed four enemy tanks and damaged two others and for gallantry in this action he received the Silver Star. After the African campaign he was sent to Italy and was in the battle of Cassino until January, 1944, when he went to the Anzio beachhead where he was wounded twice for which he received the Purple Heart with Oak Leaf Cluster. His platoon also was cited for heroic achievement by Gen. Clark in the presence of the King of England. He has the honor of having been in every major engagement in Italy until he was returned to the United States. He expects a reassignment in the United States and when peace comes he expects to be back with his old associates in the organization of Aromatic Products, Inc., who naturally are proud of his achievements.

Lieut. Romani

▸ C. Lloyd Fischbeck entered the U. S. Army at Fort Dix last month. He was formerly division manager of P. R. Dreyer Inc., New York, N. Y. His father, Charles Fischbeck, was formerly vice-president of the Dreyer Co., and is now associated with George Uhe, Inc., New York, N. Y.

▸ Miss Suzanne Friedberg, the talented daughter of Leonard Friedberg of Paris Cosmetics, Inc., New York, N. Y., and Mrs. Friedberg, charmed a large and appreciative audience at the Town Hall, New York, on the evening of April 7, by her performance as piano soloist, accompanied by the Centre Symphony Orchestra, of several of Haydn's compositions. It was the first appearance of Miss Friedberg as a soloist with an orchestra in a public concert. Miss Friedberg, not yet sixteen, is a junior at the Birch Wathan School. She played the Haydn D major concerto so well in the Music Education League's contest that the distinguished musicians serving as judges when according her second honors recommended that she be given an opportunity to play the concerto with orchestra. Accordingly two organizations concerned with promoting the cultural, educational and social aspects of good music, cooperated to arrange the concert.

▸ K. L. Paterson, Stanco Distributors, Inc., New York, N. Y., has been elected president of the Oil Trades Assn. of New York. J. L. Blakeny of Colgate-Palmolive-Peet Co., Jersey City, N. J., has become the new vice-president.

▸ Howard L. Ross has been appointed director of merchandising for Revlon Products Corp., New York, N. Y.

▸ Martin Schultes, founder and chairman of the BIMS of New York, has recovered amazingly well from his recent severe illness and his many friends will be delighted to learn that he has been at his office with the Hewitt Soap Co., New York, N. Y., for well over a month.

▸ Paul H. Lelong, head of the firm of E. Lelong, Long Island City, N. Y., is receiving the congratulations of friends on the recent marriage of his daughter, Miss Lydia M. Lelong, to Pfc. Charles F. Koehne, U. S. Army. The ceremony was performed at the Church of the Most Blessed Sacrament, Bayside, N. Y., and a reception was held at the Hotel Sanford, Flushing, N. Y. The bride's brother, Paul E. Lelong, a student at the New Hampton School where he is preparing for entrance to Cornell University, was best man. Among those on the receiving line was the bride's mother and also grandmother, widow of the late Emile Lelong, founder of the firm bearing his name.

▸ Charles T. Porter has been appointed manager of the Cosmetic Division of Sperti, Inc., Cincinnati, O. Mr. Porter has held an executive position with Sperti, Inc., during the past three years. He states that he is planning an extensive expansion of the sales and manufacturing departments of the Division, as well as a substantial increase in consumer and trade paper advertising of SRF products.

Charles T. Porter

▸ A. E. Mullen, manager of the Apli Division of Allied Products, Inc., New York, N. Y., who suffered a heart attack April 7, is resting at his home in Pelham, N. Y. His many friends in the industry who wish for his speedy recovery will be glad to know that he is showing encouraging progress in his recuperation.

▸ Ray Sanders, former manager of the wholesale division of Richard Hudnut, Inc., New York, N. Y., is now a major in the Air Force Technical Service Command, Wright Field, O. Major Sanders attended O.T.S. in Miami, Fla., and the American Air Force Intelligence School in Harrisburg. He was assigned to active duty as assistant chief of staff at A.A.F. headquarters, Intelligence, Washington, D. C., before his present post.

SINCE 1865

- **ESSENTIAL OILS**
  of highest quality
- **PERFUME COMPOUNDS**
  for every purpose
- **FRUIT FLAVORS**
  all types
- **CERTIFIED COLORS**
  food and cosmetic

YOUR INQUIRIES SOLICITED

Tenemos catalogo y lista de precios en costellano y con gusto se la enviaremos.

ESCRIBANOS

James B. Horner Inc.

ESTABLISHED 1865

215 PEARL STREET, NEW YORK 7, N. Y.

PERFUME COMPOUNDS, COLORS, FLAVORS, WATER SOLUBLE GUMS
AROMATIC CHEMICALS, ESSENTIAL OILS, OLEORESINS, ETC.

▸ Dr. Eric Kunz, president of Givaudan-Delawanna, Inc., New York, N. Y., who has been enjoying a well earned vacation at his Guernsey farm near Asheville, N. C., expects to return to his office the latter part of April.

▸ Ed Dinan has been elected vice-president in charge of sales for American Home Products, Cincinnati, O. He was formerly general sales and advertising manager.

▸ Charles A. Branham has been appointed advertising and sales promotion manager for American Home Products, Cincinnati, O. He was formerly sales promotion manager.

▸ Marie Schechter has joined Will Burgess and Co., New York, N. Y., as production manager. She was previously with Antoine de Paris, and prior to that was in charge of the buying of all printing for the Red Cross 1944 War Fund of Greater New York.

▸ Myles N. Ruttenber has been appointed territorial sales representative for the states of Indiana, Kentucky and West Virginia by the Tangee division of The George W. Luft Co., Long Island City, N. Y. P. J. Miller, Jr., W. E. Edwards and E. L. Smelser have been appointed junior sales representatives. Both Mr. Ruttenber and Mr. Miller have served more than three years in the Armed Forces.

▸ Miss Flora Kessler has resigned from the Northwestern Chemical Co., Wauwatosa, Wisc., after 30 years of meritorious service as bookkeeper and treasurer. A farewell dinner party was given in her honor, at which time she was presented with a diamond pin as a token of appreciation for long and faithful service.

▸ Otto E. Giese, proprietor of August Giese & Son, New York, N. Y., has issued an interesting booklet commemorating the 75th anniversary of the founding of the firm entitled "Overseas and Then Some." In a chatty, friendly way Mr. Giese discusses his trips abroad; and in a philosophical vein he reviews the present situation and the outlook for export trade. The concern was founded in 1870 and Mr. Giese has been identified with it for half a century.

▸ H. K. Bercaw has joined Primrose House, New York, N. Y. His territory is in Ohio, Michigan, Indiana and Kentucky. His headquarters are located in Columbus, O.

▸ E. W. Dingman is now associated with Primrose House, New York, N. Y. His territory is in Illinois, Wisconsin, Minnesota, Iowa, Missouri, Nebraska, North and South Dakota. His headquarters are in Chicago, Ill.

▸ Johan Bjorksten, Ph.D., formerly chief chemist for the Felton Chemical Co. and later in charge of development for the Pepsodent Co. has established an independent industrial research organization with offices at 185 N. Wabash Ave., Chicago, Ill.

▸ Meyer Laks has been appointed assistant to Perry Zang in the Drugs and Sundries Department of Gimbel Brothers, Inc., New York, N. Y. After graduation from Columbia College in 1924 Mr. Laks had experience with Bedina & Schlesinger, the Whelan Drug Co., for which he managed several units, and the Harrico Drug Co. Mrs. Sally Ward continues as assistant in toiletries, perfumes and cosmetics.

▸ James W. Murphy, who entered the U. S. Coast Guard in 1942, has received an honorable medical discharge after two years of convoy duty. He has rejoined the sales department of the Boston branch of Shulton, Inc., New York, N. Y.

▸ Harold V. McGann has rejoined the sales department of Shulton, Inc., New York, N. Y. He had joined the U. S. Army in 1943, and received his honorable discharge January 25, 1945.

▸ Dr. Eugene H. Wells formerly of the U. S. Food and Drug Administration, Washington, D. C., is now director of chemical and biological control of the Frederick Stearns & Co., Detroit, Mich., division of Sterling Drugs, Inc.

▸ Mrs. Marjorie P. Herzip has been appointed display director of Richard Hudnut, New York, N. Y. She was formerly packaging director for the Herb Farm Shop and Volupte. Mrs. Herzig was also associated with Richard Hudnut as designer of the Fifth Avenue Salon windows.

▸ Herbert Heinrich, Ph.D., has taken over complete direction of the Kolmar Laboratories research division, Milwaukee, Wisc. He is also vice-president of Kolmar Chemical Co., an affiliate of Kolmar Laboratories.

▸ Lieut. Stanley Rumbough, Jr., son of Col. Stanley Rumbough, president of the White Metal Manufacturing Co., Hoboken, N. J., has been serving in the Pacific area in the Marine Corps with Capt. Leon Danco, formerly manager of the perfumery and cosmetic division of McKesson & Robbins, Bridgeport, Conn. Capt. Danco incidentally is a brother of Gerard J. Danco, founder and president of the essential oil company of the same name.

▸ Charles P. Rozier has joined the sales organization of John Hudson Moore, Inc., New York, N. Y. He will operate in Texas, Arkansas and Oklahoma.

▸ Irma Ericsson, advertising manager of Shulton, Inc., New York, N. Y., has returned from a combined vacation-business trip to Cuba. While there she saw newspaper and magazine publishers, and M. C. Tello & Hno., Shulton representatives. Miss Ericsson's final week was spent at Varadero Beach, Cuba.

▸ Stewart E. LeRoy has been appointed territorial representative for the George W. Luft Co., Long Island City, N. Y. His territory consists of Western New York and Western Pennsylvania. Irving C. Snyder has been appointed as junior salesman in the Chicago district, under the supervision of Karl F. Schindl, who is in charge of the Mid-West territory.

▸ Max Knight has joined Harriet Hubbard Ayer, Inc., New York, N.Y., as sales promotion manager. He was recently medically discharged from the armed forces.

It is

with

Great Pleasure

. . . that we announce the resumption of active business relations with Tombarel Freres, Grasse, France.

We have every reason to expect that in the near future we will again be in position to offer supplies of their

- ABSOLUTE SUPREME FLOWER ESSENCES
- SURFINE ESSENTIAL OILS

as well as

- VARIOUS OTHER T. F. PERFUME SPECIALTIES

Tombarel

PRODUCTS CORPORATION
L. J. Zollinger, President
12 EAST 22nd STREET • NEW YORK 10

Chicago Representatives
A. C. DRURY & CO., INC.
219 East No. Water Street

QUALITY TUBES
for essential needs

STANDARD TUBES

KEEP BUYING WAR BONDS

Standard
SPECIALTY & TUBE CO.
New Brighton, Pa.

News and events

Flavoring Extract Mfrs. Cancel Convention

The Executive Committee of the Flavoring Manufacturers' Association of the U. S., meeting in St. Louis, Mo., on April 5, voted unanimously to cancel its annual convention for 1945.

American Home Products Corp. Plans $15,000,000 Expansion

As soon as war restrictions are lifted the American Home Products Corp., New York, N. Y., plans a plant expansion program which will involve the expenditure of $15,000,000, according to Alvin G. Brush, chairman.

The company anticipates spending $1,500,000 for laboratory research this year, approximately one-third more than was spent in 1944. Scientific personnel has been doubled within the past three years.

New Officers of Associated Drug & Chemical Industries of Missouri

At a recent election of the Associated Drug & Chemical Industries of Missouri the following officers were elected: president, Franc A. Barada, Fritzsche Brothers, Inc.; first vice-president; Morton S. Johnson, Solvey Sales Corp.; second vice-president, Richard S. Reamer, Wm. R. Warner & Co.; third vice-president, J. F. Hershner, Od Peacock Sultan Co.; secretary, Chas. E. Caspari, Jr., Monsanto Chemical Co.; treasurer, J. Louis Lanz, Dorothy Perkins.

The executive committee elected was: H. L. Dahm, G. S. Robbins & Co.; Dr. J. S. Brewer, T. M. Sayman Products Co.; C. W. Godefroy, Godefroy Mfg. Co.; Paul A. Hein, Mallinckrodt Chemical Works; Carl Meyer, III, Meyer Bros. Drug Co.; Morton Meyer, Thompson-Haywood Chemical Co.; John Mueller, S. Pfeiffer Mfg. Co.; John S. Norton, Lambert Pharmacal Co.; and Glenn H. O'Neal, Dow Chemical Co. All of the above firms are located in St. Louis, Mo.

Inter-American Conference to Discuss Essential Oils

The Third Inter-American Conference of Agriculture will meet at Caracas, Venezuela, beginning July 24, 1945. At this conference the essential oils situation in the Americas will be discussed.

Charles R. Phillips Co. in New Offices

The Charles R. Phillips Co., Inc., announces a move to new offices, located at 116 N. Fitzhugh St., Rochester 14, N. Y.

Northam Warren Dedication

A bronze plaque, dedicating a new flagpole to employees of the Northam Warren Corp., New York, N. Y., in the armed services, was placed at the base of the 85-foot pole on the grounds of the company's Stamford, Conn., plant recently. The company has 187 employees in the armed services.

Chicago Drug & Chemical Assn. Elects Officers

At a meeting held on March 29, the following officers were elected: president, Harry E. Dunning of Albert Verley & Co.; vice-president, Dale F. Ruedig of Eli Lilly & Co.; secretary, John L. Thomas of Joseph Turner & Co.; and treasurer, Wilson I. Doan of Dow Chemical Co. This was the forty-fifth annual meeting of the association.

Richard Hudnut Introduces Strawberries and Cream Make-up

Richard Hudnut, New York, N. Y., has introduced its new make-up, "Strawberries and Cream." The line consists of a new DuBarry lipstick, the color of ripe strawberries, and a new DuBarry face powder, the rich color of heavy cream. The new make-up was presented at a fashion show given in conjunction with B. Altman & Co.

Allied Drug and Cosmetic Assn. Election

At the last business meeting of the Allied Drug and Cosmetic Association the annual election of officers took place. The following new officers were elected: Gordon E. Buck, president (Standard Oil Co. of Indiana); Maison G. deNavarre, vice-president; A. S. Bedell, secretary (Beauty Counselors); Stewart Cowell, treasurer (J. T. Baker Chemical Co.). The executive committee is composed of Donald Melville, E. E. Van Allsburg and Geoffrey Snider.

Natural and Aromatic Raw Materials Essential Oils

for

Perfumery •

Cosmetics •

Soap •

LAUTIER FILS

INCORPORATED

154-158 West 18th Street
New York, N. Y.

Grasse · Paris · London · Beyrouth

Manufacturers of Quality Raw Materials For Perfumery For Over 100 Years

NEW!
UNIQUE!
DISTINCTIVE!

SALES-STIMULATING!

We are happy to announce to the trade that we are prepared to distribute these two newly created, unusual, highly attractive Glass Stoppered Bottles, as shown here, *in one-half ounce and one ounce sizes!* For full particulars, prices, etc., WRITE US AT ONCE!

OTHER ITEMS WE CAN SUPPLY:

Plastic & Metal Closures for the Cosmetic Trade in a Variety of Designs and Colors

Bottles and Jars in Opal and Flint

Specializing in Enameling Closures Your Color!

Samples on Request!

RICHFORD
CORPORATION

221 FOURTH AVE. • NEW YORK 3, N. Y.

P. E. Roehrich, President

Phones: AL4-9656 *AL4-4958*

BIMS of New York to Hold Three Golf Meetings in 1945

Dates for the three golf tournaments to be held by the BIMS of New York this Summer have been announced by the Executive Committee. The first will be held at the Baltusrol Golf Club, Short Hills, N. J., June 28; the second at the Sleepy Hollow Country Club, Scarborough-on-Hudson, N. Y., July 26, and the final meeting at the Plandome Golf Club, Plandome, N. Y., August 23.

John Powell & Co. Moves Office

The executive offices of John Powell & Co. have been moved to 1 Park Ave., New York, N. Y. The company's technical sales office, export department and laboratories remain at the old address, 114 East 32nd St. Telephone numbers have remained unchanged.

Charles Oestreich and Associates Now Control Carlova and Allied Companies

Complete control of the multi-million-dollar business and management of Carlova, Inc., New York, N. Y., and its affiliated companies has just passed into the hands of Charles H. Oestrich and associates who founded the original concern 25 years ago.

The group of companies includes Carlova, Inc., the Lander Co., Inc., Lundborg Perfumer, Inc., MacGregor Men's Toiletries, Inc., and the Elizabeth Post Cosmetics. Two large factories, one in Binghamton, N. Y., and the other in St. Louis, Mo., each with approximately 100,000 sq. ft. of manufacturing space, are said to produce a larger tonnage of popular priced cosmetics annually than any other company under single management.

The officers of the companies are: President, Charles H. Oestreich; vice-presidents, George E. Oestreich, Dr. A. Alexander and Rolfe M. Parsons; secretary, George E. Oestreich, and treasurer, Michael J. Oestreich. All of the members of the old organization will continue with the reorganized concerns.

Back in 1920, Charles H. Oestreich founded the parent company in a little office at 200 Fifth Avenue, New York, N. Y., to produce and distribute popular priced cosmetics for the variety and chain stores. The original capital was a small amount supplied by outside interests, which interests have just been purchased. This original small capital was judiciously handled, as is evident from the fact that the concern, after a quarter of a century of expansion,

Charles H. Oestreich

George E. Oestreich

Dr. A. Alexander

Rolfe M. Parsons

now does an annual volume of business in the millions. It is still located at the same address. Charles H. Oestreich, one of the colorful men in the industry, insists that credit for the growth and prosperity of the concern belongs very largely to the loyalty and ability of his associates, George E. Oestreich, Dr. A. Alexander, Rolfe M. Parsons and Miss Pauline Oestreich.

As the concern grew from its humble beginnings, it became necessary to expand its manufacturing facilities, and in the late twenties a factory was established in Binghamton, N. Y., which now serves the East generally; but ten years ago, a second plant was opened in St. Louis, Mo., under the supervision of Rolfe M. Parsons, to handle to better advantage the growing volume of business in the Middle West. Now a third plant is contemplated on the Pacific Coast.

With adequate manufacturing facilities, the concern will be in an excellent position to carry out its post-war plans for developing a large export business and for meeting the growing needs of an expanded domestic market for popular priced cosmetics largely created by the war. In addition, it is planned to develop a higher priced line of perfumes and cosmetics under the Lundborg brand, which will be advertised. To assist in carrying out these post-war plans, H. Joseph Schechter, formerly of the Toilet Goods Department of Gimbel Bros., Inc., has joined the organization as a junior executive.

Peggy Sage Buys Building

Peggy Sage has purchased the five-story building at 54 East 57th St., New York, N. Y. It will be called the Peggy Sage Building, and after extensive alterations, will house the Peggy Sage Salon, under the supervision of Miss Sage. Also located in the new building will be the wholesale showroom and the promotion and fashion office, under the direction of Miss Kathleen Spencer Cory.

Heyden Plants Add Star to "E" Flag

Two plants of the Heyden Chemical Corp., New York, N. Y., have been awarded a star to be flown with their Army-Navy "E" flags in recognition of continuous excellence in war production. The plants are located at Garfield and Fords, N. J.

Roure-Dupont, Inc., Opens Pacific Coast Branch in Hollywood, Calif.

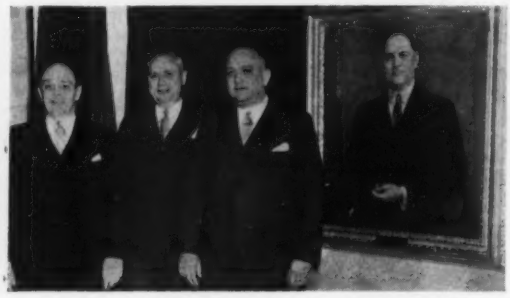
Roure-Dupont, Inc., New York, N. Y., announces that its Pacific Coast branch is now located at 5517 Sunset Blvd., Hollywood, Calif. The entire ground floor of the building is occupied by the branch. In addition to offices, ample warehouse space is provided so that adequate stocks may be carried to meet the needs of the company's customers on the Coast. The branch is in charge of Amerigo Frediani, who has been associated with the company for well over a decade, most of which time was spent on the Pacific Coast.

Titanium Dioxide and Zinc Sulfide Under New Order

Titanium dioxide and zinc sulfide have been placed under General Preference Order M-340. They were formerly under M-353.

Magnus, Mabee & Reynard Celebrate Fiftieth Anniversary

With the completion of another building to house its expanding manufacturing facilities, Magnus, Mabee & Reynard, Inc., New York, N. Y., celebrates its fiftieth anniversary of service to the essential oil industry. The new five-story building, which adjoins the firm's present quarters, adds more than 10,000 square feet of space to that which was previously used.



Percy, J. B., and Robert Magnus by a portrait of their father.

The present firm had its beginning in 1895, when Percy Cecil Magnus bought an interest in McKenzie & Hill. In 1897, the McKenzie brothers withdrew, and shortly thereafter the business was reincorporated under the name of Magnus & Lauer. In 1906 the National Essential Oils Distilling Co. of Chester, Conn., joined the parent firm, and the corporate name was changed finally to Magnus, Mabee & Reynard, Inc.

Percy Cecil Magnus died in 1916, leaving the management of the company to his sons. At the present time the firm's officers are: president, P. C. Magnus, vice-president, J. B. Magnus, vice-president, R. B. Magnus; vice-president, T. B. Tribble; treasurer, G. H. McGlynn; comptroller, C. K. O'Donoghue; assistant treasurer and technical director, A. H. Downey; and assistant treasurer and general sales manager, W. F. Fischer. Magnus, Mabee & Reynard now has agents in 20 foreign countries. In this country service is given to 67 industries.

Remus & Co. Moves Its Kansas City Office

In order to make room for war plants, Edward Remus & Co., Inc., New York, N. Y., announces the moving of its Mid-West office to 806 Delaware St., Kansas City, 6, Mo. The office is in the charge of Richard Remus, assisted by George M. Cox.

French Perfume Makers to Survey U. S. Market

A group from the French Ministry of Industrial Production is to visit this country at the end of the month.

Included in the mission are: Lucien Lelong, president of the Parisian Couture Syndicate; Raymonds Barbas of Jean Patou; Jean Jacques Guerlain of Guerlain perfumes; and others.

It is expected that the group will remain in the U. S. for about three weeks, visiting New York, Washington and Chicago.

Its purpose is to investigate conditions created by the war, what the needs of the local market now are, and about what volume of business may be expected to develop here.

René Forster Company

Fine Aromatic Chemicals

Essential Oils Specialties

404 Fourth Ave. New York 16, N.Y.

Murray Hill 5-0250

ADVERTISEMENT—*This entire page is a paid advertisement.* *Prepared Monthly by U. S. Industrial Chemicals, Inc.*

U.S.I. CHEMICAL NEWS

April ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1945

Current Shortages Rouse New Interest In Natural Resins

Spectacular Pacific Successes Seen Hastening Large-Scale Availability

Synthetic resins, like other commodities required in the war effort, have been subjected to varied restrictions as a result of constantly changing Government specifications and raw-material shortages. The first serious shortage was in glycerine, which affected the availability of many synthetics. Then, when glycerine again became available, the demand for phthalic-alkyd type resins and paints by the armed forces increased to such an extent that WPB had to place these resins under allocation.

Next came allocation of phenolic resins and, later, of the raw materials required for maleic and other specialty resins. Each move reflected the changed requirements of the military and each, of course, affected the availability of the different resins for essential civilian uses. The only conventional synthetic resin that remained free of Government restrictions as to raw materials was Ester Gum; but here the quantities available were consumed in high-rated uses so that, in effect, even it could not be considered for civilian use.

New Resins Made

Protective coatings manufacturers were forced to shift from one type of resin to another, just as the resin manufacturers were forced to shift raw materials. U.S.I., for example, found itself turning "technological handsprings" in its research laboratories and plants to make available, first, the urgently needed war resins, and then to provide new and previously untried types for varied purposes. These purposes ranged all the way from resins for use as shellac substitutes and as replacements for phthalic and alkyd types, to resins that could be used in place of the natural resins usually imported from Far Eastern areas occupied by the enemy.

Rosin Allocated

During the past month, WPB has placed rosin under allocation, setting individual consumption and inventory quotas for specified industries. This has forced the use of resins that contain either very little rosin or none at all. Through the importation of currently available natural resins, U.S.I. has kept stocks available of Congo Gum, Kauri Gum, and Accroides (Yacca or Red Gum), none of which contain rosin. Of these types, the most widely used is Congo Gum, which, until two months ago, was available for use without restriction. However, in March, due to the shortage of rosin and the resulting heavy demand for all types of rosin-free resins, the WPB placed all natural resins under Allocation Order M300—Schedule 96.

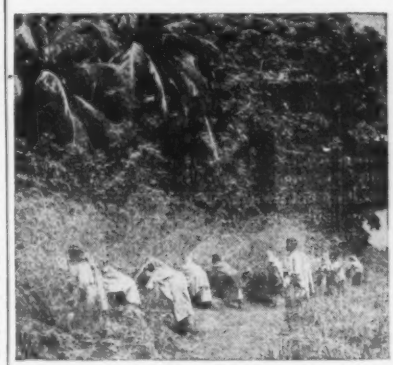
Importation of the largest possible quantities of Congo Gum, Kauri Gum and Accroides are being continued. It must be remembered, however, that war-time conditions present difficulties in gathering the gum and shipping it. It is to be expected that the spectacular advances of our armed forces in the Pacific area will open the important gum pro-

(*Continued on next page*)

Sees Hope for Early Return of Many Prewar Denaturants

Freeing of Axis-Held Territories Already Reflected in Increased Supply of Essential Oils Used in Drugs and Cosmetics

Kwang-Si Province, Calabria, Java, Madagascar, Spain, Siberia—such were the widely scattered areas of the world upon which the alcohol industry depended for denaturants used in alcohols for making lotions, shampoos, bay rum, mouth washes and the rest. Starting with the fall of France, many of these areas fell into enemy hands. Spain presented political difficulties. In Siberia and Australia, as in America itself, available manpower had to be concentrated on the production of allied war materials.



Harvesting citronella grass in Ceylon. Oil of citronella is the starting point for the synthesis of menthol.

Measures taken by alcohol producers, the Treasury Department and Central and South American countries have, to a surprising extent, alleviated many of these shortages. U.S.I., for example, has followed a system of interplant transfers which, while costly, has helped to meet customers' needs equitably.

Italian Shipments Start

However, the shipment of 80,000 pounds of oil of bergamot from Italy, last year, was the signal for new hope for the early return of the many essential oils which cannot be produced economically in the Western Hemisphere. The freeing of France and the rapid rolling back of the Japs in the Pacific has given fresh impetus to these hopes. Here, briefly, is the current situation as it affects the more important odoriferous denaturants:

Oil of citronella — Important as the starting point for the synthesis of menthol, this oil came principally from Java. Currently, an inferior grade is available from Ceylon. Guatemala and other Central American Countries have started growing citronella grasses, but it will take a year or two to get real production.

Mint oil — This source of natural menthol is now coming in large quantities from Brazil. While higher in price than the product originally obtained from Japan, natural menthol is now cheaper than the product synthesized from oil of citronella.

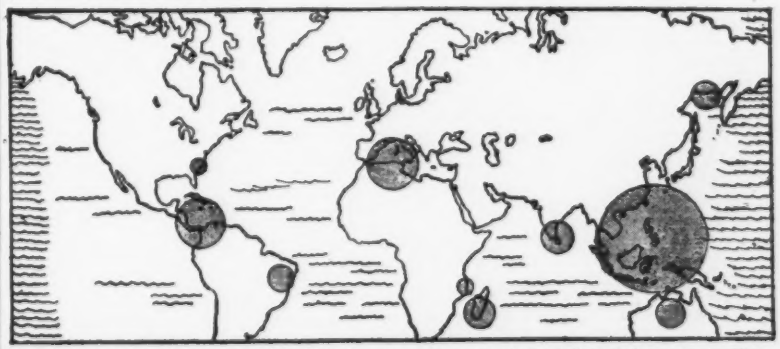
Oil of cassia — This essential oil (USP), which is used as a substitute for oil of cinammon, was produced exclusively in Kwang-Si Province, China. Currently synthetic oil of

(*Continued on next page*)

Claisen Reactions Yield Superior Drying Agents

Drying properties greatly superior to those found in naturally occuring oils, such as linseed, tung and certain fish oils, are claimed for a series of new esters described in a recent patent.

These esters are generally prepared by condensing, via a Claisen reaction, esters derived from the glycerides of natural oils such as tung, menhaden and sardine. These esters are heated in the presence of a condensing agent such as sodium hydride or U.S.I.'s Sodium Ethoxide until the conversion to the sodium derivative of the beta-keto-ester is substantially complete. The reaction mixture is then acidified and washed free of salt, acid and other soluble impurities. The water and diluent are removed by distillation and the desired product recovered as a residue.



No class of chemicals is more "global" in its origin than essential-oil alcohol denaturants. None has been more dislocated by enemy conquests, shipping shortages and manpower restrictions.

ADVERTISEMENT—*This entire page is a paid advertisement.*

April ★ **U.S.I. CHEMICAL NEWS** ★ 1945

Natural Resins

(Continued from preceding page)

ducing centers in the Philippines, Netherlands, East Indies and Singapore—much sooner than we once thought. The availability of these important resins will alleviate continuing shortages of rosins and synthetic resins without placing an additional strain on our domestic manpower.

Removes Fatty Acids by New Technique

Vegetable and animal oils for many uses are said to be freed from color, lipoids and free fatty acids by a technique which uses a vacuum neutralizer, but no heat.

The oil to be treated is first washed with water. After agitation, the mixture of oil and water is allowed to stratify, the lipoids being drawn off as part of the water layer. The oil is made color-free by mixing with clay and filtering.

Rid of lipoids and color, the oil is treated with a mixture of ethanol and sufficient sodium hydroxide to saponify the free fatty acid, the final reaction in the step taking place as the mixture is sprayed, under vacuum, into a neutralizing chamber. The result of this reaction is alcohol soap and colorless oil, free from lipoids and fatty acids. Alcohol is recovered from the residue by distillation, leaving a by-product of relatively high-grade soap stock.

New Dry Mounting Tissue Uses Phthalates and Alcohol

A new type of dry mounting tissue, used to produce fast, flat mounts of photographs and the like, is described as overcoming the common tendency to "block" or stick together in the package. The new tissue, described in a recent patent, is coated with a thermoplastic adhesive which does not become tacky at temperatures below 125 F., and therefore is non-adhesive at normal room temperatures. The adhesive heat seals, however, when pressed with an iron maintained at 200 to 220 F.

The adhesive consists essentially of cellulose acetate butyrate, a compatible plasticizer, such as diethyl or dibutyl phthalate, and an alkyd resin. The adhesive may be applied to the tissue from a melted mixture or in a benzene-denatured alcohol solvent.

Prewar Denaturants

(Continued from preceding page)

cassia, denaturant grade, is substituting for this substitute.

Camphor—Synthetic camphor has been in large-scale production in this country ever since the Japanese monopoly was broken in the early 30's. However, its important uses in photographic film, plastics, etc., made it hard to get now.

Oil of lavender—When the price of this product of Southern France skyrocketed, the Treasury Department authorized the substitution of domestic oil of cedar leaf. It is hoped that lavender will soon again be available from France.

Oil of bay—This essential ingredient of the familiar bay rum is a product of Puerto Rico and the Virgin Islands. It is now being imported without serious difficulty.

Domestic products—Oils of sassafrass, turpentine, pine, wintergreen, peppermint and cedar leaf were, fortunately, in production in this country long before the war. However, the shortage of manpower and the needs of our armed forces have combined to seriously limit the use of these oils as denaturants.

Separating clove buds and stems on far-off Zanzibar. Oil of cloves also comes from the French Island of Madagascar.

Prolonged Penicillin Action

Following research in the Naval Medical Corps, it is indicated that the effective action of a mixture of penicillin and beeswax-peanut oil lasts much longer than penicillin alone. Action is still further prolonged by application of an ice-bag at the point of injection.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

To seal waterproof bags, four adhesives are offered. Different characteristics claimed for each adapt them to four different types of jobs. They are said to meet Army-Navy packaging specifications. **(No. 921)**

USI

A range of filter aids is offered for tasks such as clarifying beer, refinery products and pectins. They range in size from one designed to remove colloidal matter of less than 0.1 micron diameter, up to those of several times that pore size and flow rate. The aids are milled from finest diatomaceous silica. **(No. 922)**

USI

Soap that lathers better, and requires less soap substance, is promised by the processor of a new colloidal clay, offered for use in soap manufacture. **(No. 923)**

USI

A new rolling-oil additive, for the metal working industry, is designed to blend with mineral oil at room temperature, and to be modified by adding kerosene. This refined fatty ester additive can be combined in proportions of 3 to 5 per cent of the mineral oil. **(No. 924)**

USI

Rigid synthetic rubber products of high electrical resistance can be produced by incorporating a new resin substitute for carbon black, according to an announcement. Proper mixtures of the three grades of the new resin are said to impart desired qualities of rigidity, hardness, elongation and tensile strength. **(No. 925)**

USI

A new wetting agent, claimed to contain no oil and only a trace of inorganic salts, is said to be particularly adapted to tasks such as scouring wool, wetting back dried skins, and in fulling soaps to assist rinsing, etc. **(No. 926)**

USI

A new adhesive, which should provide time and labor savings in merchandise handling, is designed to hold paperboard and wooden boxes together in unit loads. It is said to combine high shear strength with low tensile strength, thus preventing slippage during transit, yet making it easy to separate packages at their destination. **(No. 927)**

USI

A fire- and shock-resistant plastic, that is said to generate no toxic gases when heated, and to be easily molded, has been developed. Key to the unusual properties of the new plastic is the use of asbestos instead of organic compounds as a filler. **(No. 928)**

USI

A new glass is being manufactured to withstand operating temperatures up to 650 F and thermal shock to 400 F. It is said to have four times the strength and six times the shock-resistance of plate glass, and is suggested for use in tanks for acids, alkalis and solvents. **(No. 929)**

USI

To recover valuable metals from waste solutions is the stated function of a new process using anion exchange resins. **(No. 930)**

U.S.I INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND ST., NEW YORK 17, N. Y. — BRANCHES IN ALL PRINCIPAL CITIES

ALCOHOLS
Amyl Alcohol
Butanol (Normal Butyl Alcohol)
Fusel Oil—Refined

Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof, C.P. 96%
Absolute
*Super Pyro Anti-freeze
*Solox Proprietary Solvent

***ANSOLS**
Ansol M
Ansol PR

*Registered Trade Mark

ACETIC ESTERS
Amyl Acetate
Butyl Acetate
Ethyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
*Diatol
Diethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-anisidide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

ETHERS
Ethyl Ether
Ethyl Ether Absolute—A.C.S.

FEED CONCENTRATES
*Curbay B-G
*Curbay Special Liquid
*Vacatone 40

ACETONE
Chemically Pure

RESINS
S&W Ester Gums—all types
S&W Congo Gums—raw, fused & esterified
S&W *Aroplaz—alkyds and allied materials
S&W *Arofene—pure phenolics
S&W *Arochem—modified types
S&W Natural Resins—all standard grades

OTHER PRODUCTS
Collodions
Ethylene Glycol
Nitrocellulose Solutions
Ethylene
*Indalone
Urethan

Helfrich Laboratories Moving into New and Larger Chicago Quarters

Helfrich Laboratories, Inc., Chicago, Ill., will move, May 1, into the new modern factory building at 737-39 West Jackson Blvd., Chicago, where the concern will occupy the third, fourth, fifth, sixth and seventh floors and basement comprising about 60,000 sq. ft. of space. Ideal manufacturing conditions are afforded by high ceilings and ample natural light on all four sides. The seventh floor is now being equipped with the most modern laboratory equipment for controlled production under the direction of Chief Chemist Doyle Carpenter.

Helfrich Laboratories was established in 1921 by the late J. Howard Helfrich. Since then it has grown and prospered and now enjoys the confidence and good will of representative cosmetic companies in the middle and far west. It manufactures products exclusively for the private brand trade.

The West Jackson Boulevard building, owned by the West Jackson Building Corp., is under the management of Grant H. Heidbreder, who is also vice-president of Helfrich Laboratories, Inc.

Colgate Shows Increased Profit for 1944

Colgate-Palmolive-Peet Co., Jersey City, N. J., reports a net income for the year 1944 of $7,002,483, or $3.30 per common share. In 1943 the net income was reported at $6,616,969, or $3.10 per common share.

E. H. Little

Foreign subsidiaries constituted $862,001 of the current income, compared with $29,714 for the previous year.

Domestic sales in 1944 amounted to $134,007,782, E. H. Little, president, reports. This was $19,979,451 above the previous year, or an increase of 18 per cent. Combined sales, for domestic plus those foreign countries from which information was available, amounted to a total of $170,463,924.

Amendment Order Affects Household Package Soap

War Food Order No. 42b has been amended, affecting the manufacture of household package and bar soap.

The fats and oils quota is fixed at 80 per cent by the amendment. Soap inventories are limited to a 45-day supply. Inventories may be based on use by specific purposes. If a type of soap is short of permissible inventory for a specific purpose, a user may acquire that type soap, even though he has that type soap in inventory for other specific purposes.

Hattie Carnegie Cosmetics Have National Distribution

The line of cosmetics newly introduced by Hattie Carnegie, New York, N. Y., now has national distribution. In addition to national advertising, principally in fashion magazines, department stores and specialty shops carrying fashions are coordinating on the cosmetics line.

The line includes: face powder, lipstick, rouge, perfume, creams, skin freshener, astringent, soap, dusting powder, deodorant and cologne.

FINE AND SUPERFINE

Kelton Powders—Face, Bath, Talcum—have won an enviable place in the boudoir of madam and the dressing room of monsieur

Under many of the best known national labels, Kelton Powders associate with America's best people. Their quality holds friends and builds prestige for leading cosmetic houses who know that Kelton Powders are not only fine but superfine.

A line on your letterhead brings Self-Selling Samples which will tell you the truth without varnish.

Quantity Production of Quality Cosmetics.

KELTON

Cosmetic Company

230 West 17th Street
New York 11, N. Y.

819 Santee Street
Los Angeles 14, Cal.

Lipsticks . Rouges . Eyeshadow . Bath Powder . Face Powder . Mascara, etc.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

WHY NOT GET THE

BEST

FOR YOUR MONEY?

STANTON

AMMONIUM THIOGLYCOLATE

gives *more* value than you can audit in dollars and cents—that's why so many cosmetic manufacturers are relying for this fine organic chemical on Stanton Laboratories.

Because of the rigid laboratory controls under which Stanton Ammonium Thioglycolate is produced we can *guarantee:*

★ **PRECISE alkalinity—which means tighter ringlets without risk of harming hair.**

★ **REDUCED skin irritation—and no customer complaints on that score.**

★ **RAPID processing action—cuts the average time necessary to process hair, saves time for more customers.**

★ **PLEASANT odor—no more smelly odors to work with.**

The Stanton SPECIAL FORMULATION comes in concentration or solution as desired—at no extra cost.

Write for Details

STANTON LABORATORIES STANTON

STANTON LABORATORIES

MANUFACTURING CHEMISTS

WYNCOTE PENNSYLVANIA

specify

PENN-DRAKE

PETROLATUM

. . . for uniform PURITY in all grades and colors. Constant laboratory and research control provides resistance to oxidation, heat, light,—odor-free and tasteless qualities that meet or exceed U.S.P. requirements.

Invest in More War Bonds

penn drake petroleum products

PENNSYLVANIA REFINING CO.

GENERAL OFFICES · BUTLER, PA.

Makers White Oils (U. S. P. and Technical); Petrolatums (all grades and colors); INSECTI-SOL (deodorized insecticide base); Deodorized and other Naphthas; Petroleum Sulphonates; Waxes; Industrial and Motor Lubricants and Greases; Fuel Oils; and other petroleum products

Caron Perfume Shipment Arrives

Four cases of Caron perfume recently arrived in New York, the first perfume to reach here from France in four and a half years. Since Caron Corp., New York, N. Y., has orders from some 7,000 outlets the supply is far from adequate.

The shipment was caught in Marseilles at the time France fell in 1940, and discovered when the port was liberated, and sent on its way.

Matchabelli Wins Welch Award for Outstanding Package

Prince Matchabelli, Inc., New York, N. Y., has been judged the winner of the Charles S. Welch Memorial Award for outstanding packages placed on the market during 1944. The award is sponsored by the Toilet Goods Assn. in memory of the late Charles S. Welch, who was the first executive secretary and manager of the association.

The award was made by a jury consisting of: C. W. Browne, Elsie E. Ruffini, Elmer Sheets, Hildegarde Fillmore, John W. McPherrin, Sarah Pennoyer and William Murtha.

The jury's selection was based on two packages, the Dutchess of York ceramic jar for foundation cream,

Duchess of York Receives Welch Award

and the plastic case for Dutchess of York rouge. The jury felt that in both packages was evidenced simplicity and beauty of design, as well as a consideration of practical values.

The award, in the form of a plaque, was presented to Norman F. Dahl, president of the company, at a luncheon on April 10.

Stearic Acid Restriction

Under War Food Order-129 "certified orders" are given preferential treatment by manufacturers of stearic acid. All cosmetics and toiletries are excluded from being considered as "certified orders."

The production of triple-pressed stearic acid is forbidden except to fill certified orders in a month until the producer has filled all certified orders received before the 16 of the month. After all certified orders have been filled, producers are required to set aside 25 per cent of the remaining acid, to be used upon authorization by the Order Administrator. If no specific authority is made before the first day of the following month, any remaining stearic acid thus set aside is released from this order.

Inventories are limited to a 30-day supply in the East, and a 45-day supply in the West. When a user's inventory does not exceed 2/3 of the amount permitted, he may accept not more than one "maximum unit," equivalent to his largest 1944 order.

finer Cosmetics

. . . finer because they are manufactured in a most modern plant by skilled factory employees under the supervision of quality-minded production men according to formulas perfected by experienced chemists.

Private Label Toilet Preparations Exclusively

COSMETRIES

INCORPORATED

30 East Tenth St. New York 3, N. Y.

Essential Oils and Aromatic Products

IMMEDIATE DELIVERY

• Among the many items carried in our New York warehouse and therefore immediately available to you are:

OIL OF ROSEMARY
OIL OF SPIKE LAVENDER
OIL OF SAGE
LABDANUM GUM
OAKMOSS SOLUBLE RESIN
OIL OF NEROLI BIGARADE
SIMILE POMADE JASMIN

Let's Solve Your Perfume Problem:

The services of an eminent chemist now a member of our manufacturing staff are available to you. We are in position to solve ANY perfume problem. In addition to being *importers* of various aromatic products, we also compound various standard and special items.

• Write, 'phone or wire . . .

Try us for quality, price, delivery, better service. Let us quote on your requirements. Coast trade: Contact O. D. Royer Co., 1340 East Sixth St., Los Angeles—our new representatives.

Edward Remus & Co. Inc.
11 West 42nd Street • New York 18, N. Y.
CABLE ADDRESS: EDSUMER, NEW YORK
TELEPHONE: CHickering 4-4382
FACTORY & WAREHOUSE
607 West 43rd Street
NEW YORK, N. Y.
WESTERN OFFICE:
704 Central Street
KANSAS CITY, MO.

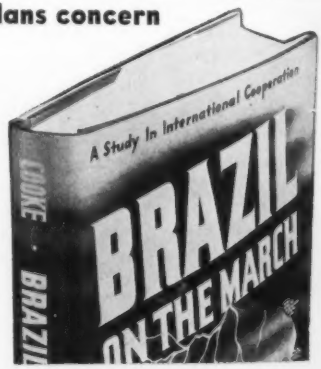
We Can Supply The Following Books

American Soap Maker's Guide (Meerbott & Stanislaus)	$7.50
Chemical Formulary (Bennett) Vol. VII	6.00
Chemistry and Manufacture of Cosmetics (de Navarre)	8.00
Commercial Methods of Analysis (Snell & Biffen)	6.00
Condensed Chemical Dictionary	12.00
Cosmetology Jurisprudence	5.00
Drug & Specialty Formulas (Belanger)	6.00
Flavor (Crocker) Just published!	2.50
Hair Dyes & Hair Dyeing (Redgrove & Foan)	5.00
How to Make and Use a Small Chemical Laboratory (Raymond Francis Yates)	1.00
Modern Cosmeticology (Ralph G. Harry)	5.00
National Formulary, VII	6.25
Non-Intoxicants (Nowak)	6.00
Perfumes & Cosmetics, Their Preparation & Manufacture (Askinson)	6.00
Plastics (J. H. DuBois)	3.75
Practical Emulsions (H. Bennett)	5.00
Practical Flavoring Extract Maker (Kessler) water damaged	2.00
Principles and Practice of Beauty Culture (Florence E. Wall)	6.00
Substitutes (Bennett)	4.00
Theory of Emulsions and Their Technical Treatment (William Clayton) 4th Ed.	10.00
Henley's Twentieth Century Book of Recipes, Formulas and Processes	4.00
U. S. Dispensatory XXIII	15.00
U. S. Pharmacopoeia, XII	7.75

ROBBINS PUBLICATIONS BOOK SERVICE
9 E. 38th St., New York 16, N. Y.

If your postwar plans concern

BRAZIL



you'll want the understanding of the Brazilian economy in terms of national background, peoples, resources, transportation, education, and mounting industrialization that this absorbing new book brings you . . .

Just Published!

BRAZIL ON THE MARCH

by MORRIS L. COOKE.

Recently Chairman, American Technical Mission to Brazil.
303 pages, 5½ x 8, 74 illustrations, $3.00.

Here is the background you need for your future dealings with this great country to the south—particularly if you are considering new investments, a new career in Latin America, or the enlargement of your present field in that direction. In 14 penetrating chapters, this book tells the story of the fourth largest country in the world—a country larger even than the United States, and fantastically rich in iron ore and other mineral resources, untapped hydroelectric power, land potential.

Authoritative, yet extremely readable, it gives you a wealth of information on Brazil's transportation, fuel, electricity, railroads, mines, factories, manpower, agriculture, power supply, technical education, etc.—even to a chapter on etiquette for American investors.

ROBBINS PUBLICATIONS BOOK SERVICE
9 East 38th St., New York 16, N. Y.

Oscar Pando Discusses South American Market

Oscar Pando, vice-president of Northam Warren Corp., New York, N. Y., discussed the current cosmetics situation in South America, at a luncheon given in his honor on March 29th.

Oscar Pando

It is Mr. Pando's conviction that the South American market offers tremendous possibilities to U. S. manufacturers. This is particularly true of Brazil and Argentina. Both of these countries are at peak prosperity. He feels that competition will be very stiff for this market, particularly from the English and French firms, which are now consolidating their positions. Quality lines are popular, and the middle priced products have a large market.

South Americans look upon manicure and treatment lines as U. S. specialties. Mr. Pando feels that U. S. products enjoy preferential consideration because they are known to be quality products. He predicts that French perfumes will return to their old place of prominence.

Outlets for cosmetics in South America are mostly in drug and department stores, and in perfume shops. Prices are difficult to control. Dark shades are most popular.

Mr. Pando, a Peruvian, has been with Northam Warren since 1928, and was made a vice-president in 1940. He makes his headquarters in Buenos Aires, and from there is in charge of all Latin American business. He supervises factories in Venezuela, Brazil, Uruguay, Argentina, Chile, Peru and Colombia.

Amyl Alcohol and Amyl Acetate Under Allocation

Amyl alcohol and amyl acetate have been placed under General Allocation Order M-300, Appendix B. The allocation period is the calendar month. Small order exemption is 34 pounds. Users of larger quantities must furnish end-use certificates.

Glycerine Assn. Awards Prizes for New Glycerine Use Suggestions

The Glycerine Producers' Assn., New York, N. Y., has announced awards for new use suggestions for glycerine, other than those contained in the recently published booklet, "Nothing Takes the Place of Glycerine—1583 Ways to Use It."

First prize, a one-hundred-dollar war bond, went to Hobert D. Young, Sinclair Refining Co., East Chicago, Ind. Other prizes went to C. R. Arnold, H. F. Goodenough, Miss Elizabeth E. Munn and Clement D. Vollaire.

Sterling Drug May Change Capital Structure

A plan has been advanced whereby the capital structure of Sterling Drug, Inc., New York, N. Y., may be changed by issuing 5,000,000 shares of common at $5.00 par, to replace the present 2,000,000 shares of common at $10.00 par value. Present shareholders would receive two for one for their present shares, and the remainder of the new shares would remain in the company treasury.

YOU CAN DEPEND NOW AS ALWAYS ON SHERWOOD'S
CONSISTENTLY HIGH QUALITY AND PERSONALIZED ATTENTION

white oils

petrolatums

ceresines, white and yellow

SHERWOOD REFINING COMPANY, INC.

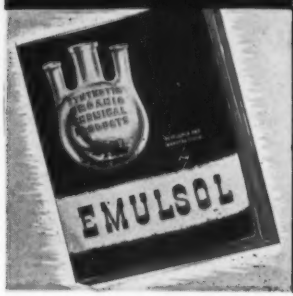
THE REFINERY OF CONTROLLED SPECIALIZATION

ENGLEWOOD, N. J. Refinery: — WARREN, PA.

there is no finer cosmetic container than a Karl Voss box

Karl Voss Corporation
HOBOKEN NEW JERSEY

A Message to MANUFACTURERS OF COSMETICS and PHARMACEUTICALS



Send for this NEW CATALOG OF SYNTHETIC ORGANIC CHEMICALS

MANY of the products listed represent the newest developments in the field of surface active chemistry.

INDEED, these should be the key to the solution of many of your manufacturing and production headaches. Likewise, they should lead to an earlier initiation of your post-war plans.

THIS unusual catalog also contains the latest information on *Emulsifiers — Emulsions — Emulsification.*

WRITE FOR A COPY TODAY . . . Address the Emulsol Corporation or any of the following authorized representatives:

E. & F. King Co., Inc.	Boston, Mass.
Larrie Equipment Co. of Dallas	Dallas, Texas
Merchants Chemical Co.	Chicago, Ill.
Merchants Chemical Co.	Cincinnati, Ohio
Merchants Chemical Co.	Council Bluffs, Iowa
Merchants Chemical Co.	Milwaukee, Wis.
Merchants Chemical Co.	Minneapolis, Minn.
Merchants Chemical Co.	New York, N. Y.
Merchants Chemical Co.	Omaha, Nebr.
Carl F. Miller & Co., Inc.	Seattle, Wash.
Carl F. Miller & Co., Inc.	Spokane, Wash.
Miller & Zehrung	Portland, Oregon
Walter A. Reinicke	Chicago, Ill.
G. S. Robbins & Co.	St. Louis, Mo.
Schaar & Co.	Chicago, Ill.
F. M. Speekman & Co.	Fresno, Calif.
F. M. Speekman & Co.	San Francisco, Calif.
Ulrich Chemical Co.	Indianapolis, Ind.
Warren & Wunderly	Los Angeles, Calif.
Hilts Laboratories	Honolulu, T. H.
Industria Basiliera DeProductos Quimicos, Ltd.	Sao Paulo, Brazil
S. W. Peterson Co., Ltd.	Sidney, Australia
S. W. Peterson Co., Ltd.	Wellington, New Zealand

ASK FOR CATALOG No. 44

THE EMULSOL CORPORATION
59 EAST MADISON STREET · CHICAGO 2, ILLINOIS

Order M-115 Restricts the Use of Collapsible Tubes

Conservation Order M-115 has been amended to restrict the use of collapsible tubes.

This action does not affect tubes in process of manufacture on or before March 31, 1935, nor to the small user who during the calendar year of 1944 did not accept more than 100 gross of tubes, except the limitation on tin content. Also, limitations do not apply to the Army, Navy, War Shipping Administration, Maritime Commission Veterans Administration, American Red Cross, or Office of Scientific Research and Development.

Lead quotas refer to the weight of lead contained in collapsible containers accepted during the corresponding quarter in 1944, whereas aluminum quotas refer to the number of units for the corresponding quarter.

Quotas for products packaged in collapsible tubes are: lather shave cream (lead), none; (aluminum), 25 per cent; brushless shave cream (lead), none, (aluminum) 25 per cent; depilatories (lead), none, (aluminum), 25 per cent; dental cleansing preparations (lead), 20 per cent, (aluminum) 25 per cent.

No tin content is permitted in any of the above except for dental cleansing preparation containers, which are permitted 3 per cent by weight of tube. The quota for aluminum brushless shave cream is limited to a product packed for sale at post exchanges and ships' service departments located within the U. S. There is no exemption for tubes imported from foreign countries.

Sterling Drug Reports Profits

Net profits of Sterling Drug, Inc., New York, N. Y., amounted to $8,121,161 for 1944 after provision for Federal and foreign income and excess profits taxes. This is equivalent to $4.55 per share, as compared to earnings of $4.45 per share for 1943.

Provisions have been made for $8,400,000 for estimated Federal and foreign income and excess profits taxes. Sales during the year amounted to $68,350,258, as compared with $59,394,478 for 1943.

Obituary

Dr. Nicholas N. Marcotoon

Dr. Nicholas N. Marcotoon, an outstanding chemist and genius in the creation of a number of nationally known lines of cosmetics, died suddenly March 9 in New York, following a week's illness, at the age of 60 years.

Dr. N. N. Marcotoon

He was born in Kiev, Russia, where he received his higher academic education at the Polytechnical Institute and the University of Kiev, from which he received his doctor's degree. He also studied at the Medical College at Rostove, Russia, and in St. Petersburg where he received additional degrees. His outstanding work in the field of chemistry was recognized by the Russian Government which adopted his invention, "Autogen."

Coming to the United States in the

LABORATORY TESTED INGREDIENTS FOR

COSMETICS

When you specify "Whittaker" ingredients for cosmetics, you can be sure of uniformity and quality. Strict testing of products is done in our own laboratory.

TALC • ALBATEX • STEARATES • COSMETIC TITANIUM • MAGNESIUM CARBONATE COLLOIDAL KAOLIN • PRECIPITATED CHALK

EST. WHITTAKER 1890 ® 7777

Whittaker, Clark & Daniels, INC.

260 West Broadway, New York City • Plant: South Kearney, New Jersey

SALES REPRESENTATIVES

CHICAGO — Harry Holland & Sons
NEW ORLEANS — Edward W. Ortenbach
PHILADELPHIA — Peltz & Company
TORONTO & MONTREAL — Richardson Agencies, Ltd.
CLEVELAND — Palmer Supplies Co., formerly Palmer Schuster Co.

B-W LANOLIN U.S.P.

EVENTUALLY—For better creams, with economy

B-W Lanolin the superior quality puts into your cream that which gives the skin that smooth soft velvety feeling.

B-W Lanolin will never cause your cream to darken, is best by test and contains over 15% free and combined Cholesterol.

No other base used in your cream, equals the merits of B-W Lanolin.

B-W HYDROPHIL (Absorption Base) Made in U.S.A.

BOPF-WHITTAM CORPORATION

Executive Office
Laboratory and Factory
LINDEN, N. J.

America's Original Lanolin Producer
ESTABLISHED 1914

Sales Office
509 Fifth Ave.
NEW YORK, N. Y.

REPLACEMENTS

For
AROMATIC CHEMICALS
ESSENTIAL SPICE
and
FLOWER OILS

•

SOAP PERFUMES
ODOR MASKS

SEELEY & CO.

136 LIBERTY STREET NEW YORK 6, N. Y.

FACTORIES

FARMINGDALE, L. I., N. Y. NYACK, N. Y.

TURNER TUBES •

SMART
MODERN
DURABLE
UNIFORM
COLORFUL

Manufacturers of COLLAPSIBLE TUBES since 1898

TURNER WHITE METAL CO., Inc. . . . New Brunswick, N. J.

early twenties, Dr. Marcotoon continued his advanced studies and research work in Columbia University and New York University. Subsequently, he became chief chemist for Helena Rubinstein during the period of that concern's greatest growth. Later, he created the Milkmaid line of toiletries which met with marked success. In 1939, he also founded and was president of the Marquise Dupond Corporation. Throughout the busy years while he was directing the affairs of the foregoing he kept up an active professional interest in the industry that he had chosen for his life work; and devoted much time to American chemical societies and associations including the Toilet Goods Association.

Dr. Marcotoon was a notable consulting engineer and chemist and served a number of this country's leading chemical concerns, as well as some in Canada, South America, Asia and Europe. As a linguist, he was able to pursue his scientific work to advantage in Africa, Turkey, India, China and Greater Asia where he studied skin diseases. In his work he won the confidence of many governmental agencies, including those of the United States, and served as a chemical expert to the U. S. Supreme Court. He is survived by his widow, Mrs. Margaret Marcotoon and a daughter, Miss Vera Marcotoon.

As a scientist, Dr. Marcotoon won a high place for himself in the American toilet goods industry to which he contributed much. Despite his extreme modesty, he had the faculty of making friends; and a host of them, of all ages, throughout the industry who sought his advice will miss his kindly and wise counsel, always cheerfully given.

Charles G. Yates

Charles G. Yates died recently at the age of 62. He had retired several years ago as vice-president of the Vick Chemical Co., New York, N. Y.

Anton Jurgens

Anton Jurgens, former board chairman of Lever Bros. and Unilever, Ltd., and one of the leaders of the world's soap and margarine industry, died on March 12 at Torquay, England, at the age of 78.

Charles Pearsall

Charles Pearsall, who was associated with the sales department of Richard Hudnut, Inc., New York, N. Y., for a number of years before going into business for himself with Gaston de Paris, Inc., from which he recently retired, died suddenly March 24 in New York, following his return from Florida where he had spent the winter. He was 62 years of age.

John D. Larkin, Jr.

John D. Larkin, Jr., 67, former president of Larkin Company, Inc., manufacturer of soap and perfumes, died April 2, in Buffalo, N. Y., after a nine year illness. He had been associated with the company, founded by his father, for 38 years. The firm was liquidated in 1942. Until his retirement in 1936, Mr. Larkin also served as president of Fioret, Inc., of Paris, a perfume manufacturer.

CODAN

Registered trade mark

MUSK AMBERGRIS CIVET

ESSENTIAL OILS

FLORAL OILS

DIRECT IMPORTS FROM ORIGIN

GERARD J. DANCO, INC.

3 EAST 44th ST., NEW YORK 17, N. Y.

VAnderbilt 6-0981

ESSENTIAL OILS DREYER AROMATIC CHEMICALS

P.R.DREYER INC.

119 WEST 19TH STREET
NEW YORK, N.Y.

IMITATION

OTTO ROSE

A duplication which accurately captures the full Rose character. Same strength as the NATURAL OTTO ROSE at one-sixteenth the price. Give it the same tests as the NATURAL OTTO ROSE and note the similarity.

SAMPLES and PRICES
ON REQUEST

FLOWER OILS • PERFUME SPECIALTIES

....LAST WORD IN "ON THE PACKAGE" PRINTING SENDS HELENA RUBINSTEIN'S "HEAVEN SENT" OUT INTO THE WORLD SELF-ASSURED AND LOVELY IN ITS PERFECTION.

SILK SCREEN PRINTERS TO THE COSMETIC FIELD

CREATIVE PRINTMAKERS GROUP

14 WEST 17 STREET • CHELSEA 3-6803-4-5

ORDER YOUR COPY NOW

The Chemistry and Manufacture of Cosmetics

by Maison G. de Navarre, Ph.C., B.S.

Consulting Chemist to the Drug and Cosmetic Industries; Special Instructor in Cosmetics at Wayne University

IT'S ready to serve every wide-awake cosmetic manufacturer. This book has in it material to show you how to successfully make any product and undertake any problem in the cosmetic field.

The author, a cosmetic research analyst of wide and fruitful experience, has put in this book more material on practical topics for successful results than can be found in any one volume.

The many hundreds of formulas—for cosmetics of all types and for all purposes—have all been produced, tested and proved in his own laboratories.

Fundamental information on colors, preservatives, antioxidants, raw materials—basic scientific principles bearing on cosmetics, from bacteriology and mycology, from chemistry (inorganic, organic and colloidal) and especially from skin, hair and scalp, places at your command many new features, new formulas and new methods.

An Expert Explains Clearly and Completely Every Detail in the Making of Up-to-the-Minute Cosmetics.

. . . Basic properties for all raw materials so you can use them most effectively . . . the proper equipment for every purpose and operation, showing step by step its operation and use . . . facts on patents for your guidance and protection . . . governmental regulations as they relate to cosmetics.

Learn From MAISON G. de NAVARRE . . .

How to avoid spoilage, how to escape corrosion, how to prevent rancidity, how to color cosmetics, and many other vital details essential to successful production.

The complete index makes this book easy to use. Data on raw materials, solvents, formulas, sample circulations are all arranged for quick, direct application. Every method, procedure and formula is at your instant command.

Only $8.00 a copy
(POSTPAID)

ORDER YOURS TODAY!

Don't delay. The profit from the wealth of improved products easily obtained, the avoidance of costly mistakes, the time and money saved, will daily prove this book's usefulness.

Now, Use the Convenient Coupon.

ROBBINS PUBLICATIONS BOOK SERVICE
9 East 38th St., New York, N. Y.

Enclosed find check or money order for.....copies of Maison G. de Navarre's THE CHEMISTRY & MANUFACTURE OF COSMETICS at $8.00 per copy.

NAME .....POSITION .....

COMPANY .....

ADDRESS .....

CITY .....STATE .....

BRIDGEPORT...

For the past two years our facilities have been devoted almost exclusively to the production of war materials. We have been fortunate, in that we have been able to handle this work on the same equipment used for our regular peace time products, and, consequently, when material again becomes available for lipstick containers, vanity cases and other metal cosmetic items we will be prepared to start producing our regular line immediately. If you too are planning your post war program, we will be glad to assist you.

THE *BRIDGEPORT* METAL GOODS MFG. CO.

Established 1909

BRIDGEPORT — CONNECTICUT

VANITY CASES • ROUGE CASES • PASTE ROUGE CONTAINERS • LIPSTICK HOLDERS (ALL TYPES) • POWDER BOX COVERS • EYEBROW PENCIL HOLDERS • BOTTLE CAPS • JAR CAPS • METAL NOVELTIES TO ORDER

THE BENDER CORP.

Manufacturing Chemists Since 1922

Toilet Water • Cologne • Perfume

BULK AND PRIVATE LABEL

•

PLANTS IN

NEWARK, N. J. • EAST ORANGE, N. J. • SAN JUAN, PUERTO RICO

Inquiries Solicited

Address all correspondence to East Orange, N. J.

Richard M. Krause inc. 50 East 19th. St. New York 3, N.Y.

ALGONQUIN 4-6760

BOX WRAPS·LABELS

ORIGINAL DESIGNS ENGRAVED PRINTED DIE-STAMPED EMBOSSED

Specializing in distinctive color printing for the toilet goods industry

Made from the world's finest crude beeswax.

Chemically tested for quality and purity.

Bleached by sun and air — nature's own method.

BEEHIVE BRAND *Beeswax*

And because of its superior quality you can use less and still get a finer finished product. Guaranteed pure . . . guaranteed always the same.

Will & Baumer Candle Co., Inc.
Established 1855
SYRACUSE, NEW YORK

Spermaceti Composition Waxes · Ceresine · Red Oil · Stearic Acid · Yellow Beeswax · Hydrotear

EXCLUSIVE PRIVATE BRAND COSMETICS

COSMIA

COSMIA LABORATORIES
95 MADISON AVE. NEW YORK 16, N. Y.

CONSOLIDATED
Established 1858 **FRUIT JAR CO.**
NEW BRUNSWICK, NEW JERSEY

SHEET METAL GOODS : CORK TOPS : SPRINKLER TOPS : DOSE CAPS

MANUFACTURERS OF

CHOLESTEROL ABSORPTION BASES

★ AMERCHOL ★ for PHARMACEUTICAL and COSMETIC preparations

Our Absorption Bases possess inherent emollient and absorption properties because of their high free Cholesterol content.

- Facilitate the penetration and absorption of incorporated therapeutic agents.
- Recommended for ease of emulsification.
- Absorb unusually large amounts of water.
- Form pure white water-in-oil emulsions, completely stable under widely varied conditions.
- Form elegant products of rich texture and consistency.

We also manufacture—

Cholesterol C. P. · Emulsifiers · Ointment Bases
Industrial Penetrants · Softening and Dispersing Agents

and other ***AMERCHOL Products.***

AMERCHOL products are manufactured from specially processed Cholesterol and other sterols.

- Will not oxidize, nor turn rancid. Unaffected by electrolytes.
- Retain their properties at extreme temperatures.
- Are for neutral, acid and alkaline creams, ointments, lotions.

American Cholesterol Products, Incorporated, Milltown, N. J. • Sales Office: 40 Exchange Pl., N. Y. C.

MARKET REPORT

A REDUCTION of $3 to $4 per pound in spot prices of Brazilian menthol furnished the outstanding development in wholesale markets over the past month. The decline which began in a rather orderly fashion gained momentum toward the close of the month with prices registering a drop of over $1 in the final week of March.

With peace rumors current with the imminent fall of Germany there was much nervousness displayed among traders. This was particularly apparent in a long list of articles that are produced in Europe.

AROMATIC CHEMICALS SCARCE

Despite the rapid gains by the Allies and the many indications that seemed to create a general feeling that hostilities would soon cease, aromatic chemical manufacturers reported that at no time since the war had business proved so difficult. War industries are absorbing a good part of the basic materials necessary in aromatic chemical manufacture and there is the ever increasing problem of obtaining sufficient labor to make shipments. Many of the oils that go into aromatic chemicals are also becoming scarce and high in price.

Oil petitgrain from Paraguay, bois de rose from Mexico, and bergamot from Italy have all become scarce thus being reflected in such items as linalyl acetate and linalool. All of the ionones display considerable strength because of rising prices on oil lemongrass as well as the uncertainty with regard to replacements from India.

While it had been hoped that supplies of much needed French oils and vanilla would be on the way to this market by this time in the face of negotiations that have been taking place in Paris, it now appears that it will take some time before these much needed raw materials begin to flow into this market. Based on authoritative reports all requirements in France will have to be filled before a resumption of exports to other countries will be permitted out of Madagascar and the other colonies.

MEXICAN BEANS ABOVE CEILING

The situation with regard to vanilla beans is extremely firm. Local importers explain that they have been unable to obtain delivery of vanilla beans which had been purchased in Madagascar many months ago. Approximately 60 tons arrived at Philadelphia about a month ago, but as far as can be learned, no additional lots of Bourbon beans are afloat and it now appears that present small stocks in this market will have to take care of consumers' requirements for some time to come. Shipping prices on Mexican beans which are above ceilings make it virtually impossible for local houses to replenish their stocks of the Mexican varieties. The Mexican crop was very small last year, and curers failed to take into consideration ceilings that existed in the United States when they purchased goods.

On the final days of March cable advices were received from Brazil stating that the Government had set a minimum export floor price on menthol of $19.50 per kilo, f.o.b., vessel which is equivalent to approximately $9.75 per pound duty paid, New York. If such reports prove true and the floor price is established, it is quite possible that such a development may put an end to the declining market. In some quarters it is felt that the recent decline had been extended too far and that prices are below production costs, but it is rather difficult to determine actual costs since menthol production is a relatively new venture in Brazil. It could not be possible to compare production costs in Brazil with pre-war production costs in the Far East. This is explained by the fact that prior to the outbreak of the war both China and Japan were able to dispose of dementholized peppermint oil through European outlets which have been entirely closed to Brazilian dementholized oil.

Developments in some of the gums proved highly interesting with all grades of ribbon tragacanth registering declines by reason of fairly liberal offerings and an irregular demand. Karaya and arabic, however, displayed considerable strength. Shipping prices on both karaya and arabic moved upward. Last arrival of gum arabic which was about six weeks ago created a general feeling that there would be sufficient quantities to meet requirements for some time. As far as can be learned, however, there are no goods afloat and unexpected export orders have reduced the local supply to a rather surprisingly low level. A sudden spurt in the demand for gum olibanum brought out the fact that the spot supply of tears was very low. The number one and two grades scored advances under the influence of the improved demand.

CAUSTIC SODA IN TIGHT POSITION

Among the chemicals, the supply position in solid caustic potash remains firm. Reports about the market indicate, however, that there may possibly be some easement in the position of liquid potash. Caustic soda and soda ash remain in a tight position. Major producers point out that the flow of bulk soda ash is fairly even but the manpower shortage is having a rather serious effect upon shipments of packaged goods.

BALSAM TOLU SCARCE

With shipping prices on balsam copaiba remaining at above maximum OPA sales prices in this market there does not appear to be any hope of replacements from the primary center. Demand for balsam Peru has remained narrow but the Tolu variety is likewise scarce by reason of high shipping prices quoted from the primary market.

The crude glycerine market settled back into a routine affair following a slight rise in prices. For a time non-refiners seemed highly concerned regarding replacements.

Use LABELS & SEALS ooo

FAITHFUL SERVICE FOR OVER FIFTY YEARS

by JOHN HORN

for greatest sales appeal

METAL · EMBOSSED
ENGRAVED
DIE STAMPING FOR BOXMAKERS

JOHN HORN 835-839 TENTH AVE., NEW YORK 19, N.Y.
DIE STAMPING ENGRAVING EMBOSSING
Telephone: COLUMBUS 5-5600 ★ Cable Address HORNLABELS NEW YORK

Dealer's Choice

YOU tell us the product you want

And we

- CREATE THE FORMULA
- DESIGN THE PACKAGE
- ORDER ALL MATERIALS
- DELIVER YOUR FINISHED PRODUCT
- READY FOR SALE

COMPLETE PRIVATE LABEL SERVICE — COSMETICS—PERFUMES

HOUSE OF HOLLYWOOD

WEST COAST PLANT 777 E. Gage, Los Angeles 1 — — EAST COAST PLANT 351 W. 48th St., New York 19

CREMOGENE A

(ABSORPTION BASE)

Available at present in limited quantities. Those who have never used this excellent base should try out small lots so as to be ready when larger quantities are available. In many instances an extender for lanolin—in some a replacement.

PRICES

5 lbs. @ .63 per lb.
10 lbs. @ .60 " "
25 lbs. @ .56 " "
50 lbs. @ .55 " "

f.o.b. N.Y.C.

Domestic Export

R. F. REVSON CO.

144 W. 18th St. New York City 11, N. Y.

Founded 1854

FEZANDIE & SPERRLE, Inc.

205 Fulton Street, New York City

HIGHEST STANDARD

Colors and Dyes for Cosmetics, such as

LIPSTICKS
ROUGES
FACE POWDERS
MASCARA
SOAPS
PERFUMES
LOTIONS
SHAMPOOS
CREAMS
Etc.

Your inquiries are invited

3 NEW WHITE SACHET FILLERS

Made in fine ground wood powder—NEUTRAL COLOR.
Fine ground aromatic red cedar powder.
Also finely ground mineral dust.
Highly absorbent, retains scent.
Above grades are now being used in the cosmetic industry.
Always uniform—prompt shipment—no priorities needed.

Sawdust for other purposes—special fine and coarse grades.

Ask for samples

Cosmetic Materials Division

NATIONAL SAWDUST CO. INC.

76 North 6th Street Brooklyn 11, N. Y.

PRICES IN THE NEW YORK MARKET

(Quotations on these pages are those made by local dealers, but are subject to revision without notice)

ESSENTIAL OILS

Almond Bit, per lb.	3.50@	4.00
F. P. A.	5.00@	5.50
Sweet True	1.45@	1.75
Apricot Kernel	.50	Nom'l
Amber, rectified	2.25	Nom'l
Angelica Root	125.00@	150.00
Anise, U. S. P.	4.00	Nom'l
Imitation	1.75@	2.10
Aspic (spike) Span.	3.75@	4.00
Avocado	1.05@	1.25
Bay	1.50@	1.75
Bergamot	9.00	Nom'l
Artificial	4.00@	9.25
Birch, sweet	2.75@	5.00
Birchtar, crude	2.25	Nom'l
Birchtar, rectified	4.25	Nom'l
Bois de Rose	5.50@	5.75
Cade, U. S. P.	.90@	1.20
Cajeput	2.35@	3.00
Calamus	22.50@	35.00
Camphor "white," dom.	.35	Nom'l
Cananga, native	12.75@	13.00
Rectified	15.00@	16.25
Caraway	20.00@	22.00
Cardamon	21.00@	25.00
Cassia, rectified, U. S. P.	12.00	Nom'l
Imitation	3.75@	
Cedar leaf	1.35@	1.60
U. S. P.	2.65@	3.34
Cedar wood	1.00@	1.10
Celery	18.00@	22.00
Chamomile	150.00	Nom'l
Cinnamon bark oil	32.50@	35.00
Citronella, Ceylon	1.10@	1.20
Java	3.25	Nom'l
Cloves, Zanzibar	1.80@	1.85
Coriander	30.00@	32.00
Imitation	12.00@	14.00
Croton	3.75@	4.25
Cumin	9.00@	11.00
Dillseed	8.00	Nom'l
Erigeron	2.25@	5.00
Eucalyptus	1.12@	1.19
Fennel, Sweet	4.00	Nom'l
Geranium, Rose, Algerian	15.00	Nom'l
Bourbon	15.00@	
Turkish	5.00@	5.80
Ginger	20.00@	22.00
Guaiac (Wood)	4.00@	4.80
Hemlock	2.65@	3.34
Substitute	.55@	.60
Juniper Berries	12.50@	16.00
Juniper Wood, imitation	1.00@	1.25
Laurel	5.00	Nom'l
Lavandin	8.25	Nom'l
Lavender, French	12.00	Nom'l
Lemon, Calif.	3.25	Nom'l
Lemongrass	2.00@	2.25
Limes, distilled	7.00@	7.75
Expressed	13.50@	15.00
Linaloe	4.00@	4.15
Lovage	95.00	Nom'l
Marjoram	7.25@	7.50
Neroli, Bigarde P.	300.00@	375.00
Petale, extra	265.00@	300.00
Olibanum	5.00@	5.75
Opopanax	30.00@	38.00
Orange, bitter	4.00@	4.25
Brazilian	1.50@	1.65
Calif., exp.	2.00@	
Orris Root, abs. (oz.)	135.00@	
Artificial	36.00@	40.00
Pennyroyal, Amer.	4.10@	4.25
European	4.10	Nom'l
Peppermint, natural	7.50@	7.75
Redistilled	8.05@	
Petitgrain	2.25@	2.50
Pimiento	7.50@	8.00
Pinus Sylvestris	4.25@	5.00
Pumillonis	4.25@	4.75
Rose, Bulgaria (oz.)	30.00@	40.00
Synthetic, lb.	45.00@	55.00
Rosemary, Spanish	1.50@	1.65
Sage	4.00@	4.85
Sage, Clary	25.00@	30.00
Sandalwood, N. F.	7.00@	7.25
Sassafras, natural	2.00@	2.15
Artificial	.95@	1.25
Snake root	12.00	Nom'l
Spearmint	4.00	Nom'l
Thyme, red	3.20@	3.75
White	3.65@	5.00
Valarian	40.00	Nom'l
Vetivert, Java	50.00	Nom'l
Bourbon	30.00@	32.00
Wintergreen	4.85@	8.50
Wormseed	5.25	Nom'l
Ylang Ylang, Manila	38.00	Nom'l
Bourbon	13.00@	20.00

(Continued on page 97)

Lanone

LOOKS — BEHAVES — FEELS

Like Lanolin

BUT

HAS GREATER EMULSIFYING PROPERTIES
PRACTICALLY ODORLESS

Lanone is being successfully used in lipstick, shaving creams, hand creams, emollient creams and other cosmetics.

Write for Literature and Samples
Price 35¢ lb. in drums
quantity price lower

CONTINENTAL
CHEMICAL COMPANY
2640 Harding Ave., Detroit 14, Mich.

PROFESSIONAL SERVICE

FIFTH AVENUE PROTECTIVE ASS'N

220 Fifth Avenue, New York City

38 Years of RESULT PRODUCING Service Proves Our Worth

The "TRADES" Recognized CREDIT and COLLECTION AGENCY.

GEORGE W. PEGG Ph. C.

Consultant

Cosmetics—Drugs—Industrial Alcohol—Flavoring Extracts
Labeling—Advertising—Formulas

152 W. 42nd St., N. Y. 18, N. Y. Tel.: Wisconsin 7-3066
Washington address: 2121 Virginia Ave. N.W., Washington 7, D.C., c/o Dr. George W. Hoover

BRAMLÉ LABORATORIES

consultants to the
Cosmetic - Perfume and Pharmaceutical Industries
Formulas - Processes - Labeling, etc.
36 West 59th St., New York 19, Wi-2-4141

DESIGNING PACKAGES *with* NEW IDEAS
ARTISTIC TASTE
Consult
L. SEGY, 8 E. 77, N.Y.C.

JOHAN BJORKSTEN, Ph.D.
CONSULTING CHEMIST
Write for Complimentary Booklet on Consulting Services
185 N. WABASH AVENUE, CHICAGO 1, ILLINOIS
ANDover 1726

REALIZE LARGE TAX BENEFITS

LONG ESTABLISHED, REPUTABLE CONCERN
WITH SUBSTANTIAL CAPITAL

WILL BUY FOR CASH

Assets, Capital Stock, Family Holdings of

Industrial Plants, Mfg. Divisions, Units

We are Principals, and act only in strictest confidence, retaining personnel wherever possible. Address

BOX 1200—1474 BROADWAY, N. Y. C.

CLASSIFIED ADVERTISEMENTS

The rates for advertisements in this section are as follows: Business Opportunities, $1.00 per line per insertion. Situations Wanted and Help Wanted, 50c per line per insertion. Please send check with copy. Address all communications to THE AMERICAN PERFUMER, 9 East 38th St., New York.

BUSINESS OPPORTUNITY

WANTED: 2—Dry Powder Mixers; 2—Pony Mixers; 2—Tablet Machines; 1—Filter; 3—Kettles; 2—Filling Machines. No dealers. Write Box 2353, The American Perfumer and Essential Oil Review.

FOR SALE: Karl Kieffer twelve-spout rotary gravity filling machine. Newly reconditioned. Box 2529, The American Perfumer and Essential Oil Review.

HELP WANTED

GRADUATE CHEMIST or Chemical Engineer, experienced in perfume and cosmetic manufacture to supervise production, research and testing laboratory. Excellent opportunity for right man. State age, training, experience, draft status, salary desired in first letter. Replies held in strict confidence. Write Box 2519, The American Perfumer and Essential Oil Review.

COMPOUNDER—Flavors & Perfumes, wanted by well established progressive firm as head of newly organized Compounding Dept. Attractive salary on either bonus or profit-sharing basis. Write Box 2525, The American Perfumer and Essential Oil Review.

SALES MANAGER with successful record, good personal contacts with cosmetic buyers, wanted by well-established, rapid growing cosmetic enterprise. Box 2530, The American Perfumer and Essential Oil Review.

SALESMAN for Midwest, thoroughly experienced in handling high-grade cosmetics, having good personal contacts with buyers department stores and better drug stores. Well established line of fine cosmetics. Box 2531, The American Perfumer and Essential Oil Review.

CONSOLIDATED OFFERS

1—World automatic Straightaway Labeller.
1—90 gal. stainless steel jack. Kettle.
1—#5 Sweetland Filter, 20 copper leaves.
1—Stokes auger type Powder Filler.
1—Semi-automatic Labeling Machine.
5—Dry Powder Mixers, up to 2000 lbs.
20—Aluminum, Copper, Glass Lined, jacketed and agitated Kettles.
1—Abbe Blutergess Sifter #2.
2—Colton #3 Toggle Presses.
3—Stokes Steam Water Stills, 5, 10, 25 gal. per hour.

Only a partial listing. Send us your inquiries.

FOR 35 YEARS A FRIEND OF COMMERCE
We buy and sell from a Single Item to a Complete Plant
CONSOLIDATED PRODUCTS CO., INC.
14-15 Park Row, New York, N. Y., Shops: 335 Doremus Ave., Newark, N. J.

PERFUMERY EXECUTIVE AVAILABLE

(Cosmetic Chemist, Ph.D.)

Well known in his field, desires to extend scope of activities. Broad experience in formulating, manufacture and also packaging development of fine cosmetics and perfumes. Unusual ability — while remaining adaptable and flexible. Pleasant personality, optimistic and forward looking. Interested only in permanent connection with assured future. Starting salary plus profit-sharing bonus should be commensurate with experience and ability. Confidence assured and requested.

Write Box 2527
American Perfumer & Essential Oil Review

(Continued from page 95)

TERPENELESS OILS

Bergamot	25.00	Nom'l
Grapefruit	65.00@	
Lavender	28.00	Nom'l
Lemon	45.00	Nom'l
Lime, ex.	80.00@100.00	
Distilled	60.00@ 67.00	
Orange sweet	65.00@112.00	
Peppermint	13.35@ 14.00	
Petitgrain	3.50@ 3.75	
Spearmint	5.00@ 6.00	

DERIVATIVES AND CHEMICALS

Acetaldehyde 50%	1.90@ 2.75	
Acetaphenone	1.70@ 1.80	
Alcohol C 8	7.50	Nom'l
C 9	14.00	Nom'l
C 10	7.75@ 12.00	
C 11	11.50	Nom'l
C 12	7.20@ 8.50	
Aldehyde C 8	22.50@ 28.00	
C 9	32.00	Nom'l
C 10	22.00@ 29.00	
C 11	22.00	Nom'l
C 12	25.00@ 30.00	
C 14 (so called)	9.25@ 9.75	
C 16 (so called)	7.65@ 8.25	
Amyl Acetate	.55@ .75	
Amyl Butyrate	.90@ 1.10	
Amyl Cinnamate	4.50@ 5.80	
Amyl Cinnamate Aldehyde	2.75@ 5.00	
Amyl Formate	1.00@ 1.50	
Amyl Phenyl Acetate	3.75@ 4.00	
Amyl Salicylate	.80@ 1.00	
Amyl Valerate	2.10@ 2.75	
Anethol	3.50	Nom'l
Anisic Aldehyde	3.35@ 4.00	
Benzophenone	1.15@ 1.30	
Benzyl Acetate	.75	Nom'l
Benzyl Alcohol	1.85	Nom'l
Benzyl Benzoate	1.10	Nom'l
Benzyl Butyrate	2.15@ 3.25	
Benzyl Cinnamate	5.15	Nom'l
Benzyl Formate	2.50@ 3.75	
Benzyl-Iso-eugenol	10.25	Nom'l
Benzylidenacetone	2.25@, 3.40	
Borneol	1.80	Nom'l
Bornyl Acetate	2.00	Nom'l
Bromstyrol	6.25@	
Butyl Acetate	.18¼@.18½	
Cinnamic Acid	3.75@ 4.50	
Cinnamic Alcohol	3.85@ 4.25	
Cinnamic Aldehyde	2.65@ 3.90	
Cinnamyl Acetate	10.50@ 12.00	
Cinnamyl Butyrate	12.00@ 14.00	
Cinnamyl Formate	10.00@ 13.00	
Citral, C. P.	4.50@ 7.00	
Citronellol	6.50@ 7.00	
Citronellyl Acetate	8.60@ 9.20	
Coumarin	3.00@ 3.50	
Cuminic Aldehyde	8.00@ 11.25	
Diethylphthalate	.24	Nom'l
Dimethyl Anthranilate	4.55@ 5.00	
Ethyl Acetate	.25@ .35	
Ethyl Anthranilate	5.50@ 7.00	
Ethyl Benzoate	.90@ 1.15	
Ethyl Butyrate	.75@ .90	
Ethyl Cinnamate	3.50	Nom'l
Ethyl Formate	.70@ .95	
Ethyl Propionate	.80	Nom'l
Ethyl Salicylate	.90@ 1.00	
Ethyl Vanillin	5.25@ 6.00	
Eucalyptol	2.85	Nom'l
Eugenol	3.30@ 3.50	
Geraniol, dom.	5.50@ 6.00	
Geranyl Acetate	4.00	Nom'l
Geranyl Butyrate	8.50	Nom'l
Geranyl Formate	13.40	Nom'l
Heliotropin, dom.	6.50	Nom'l
Hydrotopic Aldehyde	15.00@ 18.00	
Hydroxycitronellal	8.50	Nom'l
Indol, C. P.	23.00@ 26.50	
Iso-borneol	1.10	Nom'l
Iso-butyl Acetate	1.25@ 2.00	
Iso-butyl Benzoate	1.50@ 2.60	
Iso-butyl Salicylate	2.70@ 3.00	
Iso-eugenol	4.00	Nom'l
Iso-safrol	3.00	Nom'l
Linalool	9.00	Nom'l
Linalyl Acetate 90%	8.75@ 9.00	
Linalyl Anthranilate	15.00@	
Linalyl Benzoate	10.50@	
Linalyl Formate	9.25@ 12.00	
Menthol, Brazilian	10.00@ 11.50	
Methyl Acetophenone	1.80	Nom'l
Methyl Anthranilate	2.25@ 2.40	
Methyl Benzoate	.60@ 1.00	
Methyl Cellulose, f.o.b. shipping point	.60	Nom'l
Methyl Cinnamate	3.00	Nom'l
Methyl Eugenol	3.50@ 6.75	
Methyl Heptenone	3.50	Nom'l
Methyl Heptine Carbonate	45.00@ 60.00	
Methyl Iso-eugenol	5.85@ 10.00	
Methyl Octine Carbonate	24.00@ 30.00	
Methyl Paracresol	2.50	Nom'l
Methyl Phenylacetate	3.75@ 4.00	
Methyl Salicylate	.37@ .38	
Musk Ambrette	4.25@ 4.50	
Ketone	4.35@ 4.80	
Xylene	1.65@ 2.50	
Neroline (ethyl ether)	2.00@ 3.15	
Paracresol Acetate	2.55@ 3.00	
Paracresol Methyl Ether	2.60@ 2.85	
Paracresol Phenyl-acetate	6.50@ 8.50	
Phenylacetaldehyde 50%	3.00	Nom'l
100%	5.00	Nom'l
Phenylacetic Acid	3.00@ 3.75	
Phenylethyl Acetate	2.50	Nom'l
Phenylethyl Alcohol	2.80@ 3.00	

(Continued on page 99)

CHIEF CHEMIST WANTED

Leading manufacturer of Extracts, Spices, Food Products, Perfumes and Toilet Preparations, Soaps and Farm products with plants in the United States and Canada requires a male chemist (Ph.D.), 35 to 45 years of age, to head research and control laboratories. Applicant must have broad experience in formulating and manufacture—and be able to develop practical formulae for new products in keeping with changing public preference, incorporating latest technical findings.

The position we offer is an opportunity which comes once in a lifetime. With us your future depends entirely on the results you obtain.

Indicate education, experience, age, results obtained, references, salary you expect, civil status and health condition. Send recent photograph.

Present Chief Chemist leaving due to ill health. Our employees know of this ad. Your reply will be held in strict confidence.

WRITE BOX 2528
CARE OF THE AMERICAN PERFUMER
AND ESSENTIAL OIL REVIEW
9 EAST 38TH ST. NEW YORK 16, N. Y.

CYCLONOL

CHARACTERISTIC ODOR *and* COOLING EFFECT OF MENTHOL

Cyclonol is chemically 1-methyl-3-dimethyl-cyclohexanol-(5). Graphically the structural formula is given in Fig. 1. It may be considered a lower homologue of symmetric or meta Menthol which has the structural formula shown in Fig. 2.

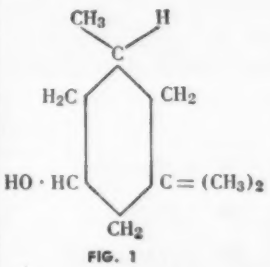


FIG. 1

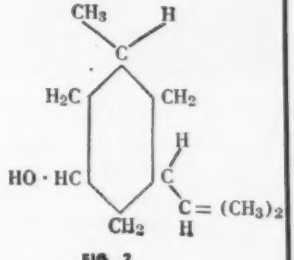


FIG. 2

Cyclonol replaces Menthol satisfactorily in shaving creams and lotions, liniments, analgesic balms, ointments and similar preparations. It has also been accepted by the U. S. Treasury Department as a Denaturant for alcohol in place of Menthol U.S.P.

W. J. BUSH & CO., INC.

LICENSED DISTRIBUTORS
11 EAST 38th ST. NEW YORK 16, N. Y.

INDEX TO ADVERTISERS

Allied Products, Inc. ... 31
Aluminum Seal Company ... 3
American Cholesterol Products, Inc. ... 92
Ansbacher-Siegle Corp. ... —
Aromatic Products, Inc. ... 66
Atlantic Refining Co., The ... —
Baker & Bros., H. J. ... —
Bender Corp., The ... 91
Bopf-Whittam Corporation ... 88
Braun Co., W. ... 98
Bridgeport Metal Goods Mfg. Co., The 91
Broder, Harry ... 23
Bush & Co., Inc., W. J. ... 1, 97
Bush Aromatics, Inc. ... 100
California Fruit Growers Exchange ... 28
Camax Company, The ... 55
Carr-Lowrey Glass Co. ... —
Chiris Co., Inc., Antoine ... —
Classified Advertisements ... 96
Consolidated Fruit Jar Co. ... 92
Consolidated Products Co., Inc. ... 96
Continental Chemical Co. ... 95
Cosmetries, Inc. ... 83
Cosmia Laboratories ... 92
Creative Printmakers Group ... 90
Danco, Inc., Gerard J. ... 89
Dodge & Olcott Co. ... 5
Dow Chemical Co., The ... 59
Dreyer, Inc., P. R. ... 90
Drury & Co., Inc., A. C. ... 95
du Pont de Nemours & Co., E. I. ... —
Duval, Compagnie (Div. of S. B. Penick & Co.) ... —
Emulsol Corp., The ... 86
Evans Chematics, Inc. ... 8
Evans Chemicals, Limited ... 8
Felton Chemical Co., Inc. ... 29
Fezandie & Sperrle, Inc. ... 94
Firmenich & Co. ... 38
Florasynth Laboratories, Inc. ... 64
Forster, René ... 78
French, Inc., Benj. ... —
Fritzsche Bros., Inc., Insert Pages 9-10-11-12
Furlager Mfg. Co., Inc. ... —
General Drug Co. ... Back Cover
Givaudan-Delawanna, Inc., Insert Pages 60, 61
Glass Industries, Inc. ... —
Glycerine Producers Association ... 62
Goldschmidt Corp., The ... —
Hazel Atlas Glass Co. ... 15
Helfrich Laboratories, Inc. ... 25
Horn, John ... 94
Horner, Inc., James B. ... 72
House of Hollywood ... 94
Innis, Speiden & Company ... —
Interstate Color Co. ... —
Kelton Cosmetic Co. ... 81
Kiefer Machine Co., The Karl ... —
Kimble Glass Co. ... 26
Krause, Richard M. ... 92
Lachman-Novasel Paper Co. ... —
Laco Products, Inc. ... —
Lautier Fils, Inc. ... 76
Leeben Chemical Co., Inc. ... —
Leonhard Wax Co., Inc., Theodor ... —
Lueders & Co., George ... 2
Magnus, Mabee & Reynard, Inc. ... 70
Malmstrom & Co., N. I. ... —
Maryland Glass Corp. ... Inside Back Cover
Merck & Co., Inc. ... 4
Meyercord Co., The ... —
National Sawdust Co., Inc. ... 94
Naugatuck Aromatics ... 27
New England Collapsible Tube Co. ... 36
Norda Essential Oil & Chemical Co., Inc. ... 32
Northwestern Chemical Co., The ... —
Owens Illinois Glass Co. ... —
Parento, Inc., Compagnie ... 17
Paris Cosmetics, Inc. ... 16
Parsons, M. W. ... 99
Penick & Co., S. B. (Compagnie Duval Div.) ... —
Pennsylvania Refining Co. ... 82
Pfaltz, Harry E. ... —
Polak & Schwartz, Inc. ... —
Powell & Co., Inc., John ... 100
Remus & Co., Inc., Edward ... 84
Revson Co., R. F. ... 94
Richford Corp. ... 76
Ritchie & Co., W. C. ... 19
Rodex Laboratories ... —
Roure-Du Pont, Inc. ... 13
Schimmel & Co., Inc. ... 24
Seeley & Company ... 88
Sherwood Refining Company, Inc. ... 85
Sierra Talc Co. ... —
Sparhawk Co. ... 82
Standard Alcohol Co. ... —
Standard Specialty & Tube Co. ... 74
Standard Synthetic Co. ... 30
Stanton Laboratories ... 82
Swindell Bros. ... —
Synfleur Scientific Laboratories, Inc. ... 14
Syntomatic Corp. ... 68
Thurston & Braidich ... —
Tombarel Fréres ... 74
Tombarel Products Corp. ... 74
Turner White Metal Co., Inc. ... 88
Ungerer & Co. ... Inside Front Cover
U. S. Industrial Chemicals, Inc., Insert Pages 79,80
van Ameringen-Haebler, Inc. ... 6-7
Vanderbilt Co., Inc., R. T. ... 98
Van Dyk & Co., Inc. ... 34
Verley and Company, Albert Insert Pages 21, 22
Voss Corporation, Karl ... 86
Whittaker, Clark & Daniels, Inc. ... 87
Will & Baumer, Candle Co., Inc. ... 92
Wirz, Inc., A. H. ... Front Cover

Over ⅓ Century of Dependability

- BOTTLES
- JARS
- CLOSURES

...and remember, Ceramic coloring and lettering at our GLASSCRAFTERS Division

W. BRAUN CO.

300 N. CANAL ST. . . . CHICAGO 6, ILL.

Laboratory Bldg., R. T. Vanderbilt Co., E. Norwalk, Conn.

VEEGUM

Magnesium Aluminum Silicate Gel

for

Leg Make-up
Anti-Perspirants
Hand Creams
Tooth Pastes
Emulsions
Brushless Shaving Creams
Lather Shaving Creams

Protects Flavors . . . . Protects Perfumes
Stabilizes Emulsions

♦

Samples upon Request

♦

Specialties Department

R. T. VANDERBILT CO., INC.

230 Park Avenue • New York 17, N. Y.

(Continued from page 97)

Phenylethyl Anthranilate	16.00@	
Phenylethyl Butyrate	3.65@	4.00
Phenylethyl Propionate	3.45@	3.90
Phenyl Valerianate	16.00@	17.50
Phenylpropyl Acetate	10.00	Nom'l
Santalyl Acetate	20.00@	22.50
Scatol, C. P. (oz.)	5.35@	6.00
Styrolyl Acetate	2.50@	3.00
Vanillin (clove oil)	2.60	Nom'l
(guaiacol)	2.35	Nom'l
Lignin	2.35	Nom'l
Vetivert Acetate	25.00	Nom'l
Violet Ketone Alpha	18.00	Nom'l
Beta	15.00	Nom'l
Methyl	6.50	Nom'l
Yara Yara (methyl ester)	2.00@	3.10

BEANS

Tonka Beans, Surinam	.80@	.95
Angostura	1.75@	2.00
Vanilla Beans		
Mexican, whole	11.00@	
Mexican, cut	10.00@	
Bourbon	9.50@	10.50
Tahiti	4.00@	

SUNDRIES AND DRUGS

Acetone	.8½@	.09
Almond meal	.25@	.35
Ambergris, ounce	12.00@	16.00
Balsam, Copaiba	.75	Nom'l
Peru	.90@	1.25
Beeswax, bleached, pure U. S. P.	.58	Nom'l
Yellow, refined	.53½	Nom'l
Bismuth, subnitrate	1.20@	1.22
Borax, crystals, carlot ton	55.50@	58.00
Boric Acid, U. S. P., cwt.	6.95@	7.55
Calamine	.18@	.20
Calcium, phosphate	.08@	.08¾
Phosphate, tri-basic	.09@	.10
Camphor, domestic	.69@	.84
Castoreum	13.00@	17.00
Cetyl Alcohol	1.75	Nom'l
Pure	2.25	Nom'l
Chalk, precip.	.03½@	.06½
Cherry Laurel Water, jug, gal.	3.60@	4.00
Citric Acid	.21	Nom'l
Civet, ounce	18.00@	25.00
Clay, colloidal	.07@	.15
Cocoa, Butter, lump	.25½@	.27
Cyclohexanol (Hexalin)	.30@	.50
Fuller's Earth, ton	15.00@	33.00
Glycerin, C. P., drums	.15½@	.15¾
Gum Arabic, white	.42@	.45
Amber	.13@	.13½
Powdered, U.S.P.	.18@	.21
Gum Benzoin, Siam	5.00	Nom'l
Sumatra	1.40	Nom'l
Gum Galbanum	1.80@	2.00
Gum Myrrh	.55	Nom'l
Henna, pwd.	.30@	.35
Kaolin	.05@	.07
Labdanum	3.25@	5.00
Lanolin, hydrous	.30@	.34
Anhydrous	.31@	.35
Magnesium, carbonate	.09@	.10¾
Stearate	.24@	.27
Musk, ounce	50.00	Nom'l
Olibanum, tears	.21@	.35
Siftings	.11½@	.13
Orange Flower Water, gal.	1.75@	2.25
Orris Root, African, pwd.	1.10@	1.15
Paraffin	.06@	.09
Peroxide	1.10@	1.75
Petrolatum, white	.06¼@	.08½
Quince Seed	1.65@	1.95
Rice Starch	.10	Nom'l
Rose Leaves, red	3.45@	4.00
Rose Water, gal.	6.50@	8.00
Rosin, M. per cwt.	7.15@	
Salicylic Acid	.35@	.40
Saponin	2.00@	2.50
Silicate, 40°, drums, works, 100 pounds	.80@	1.20
Soap, neutral, white	.20@	.25
Sodium Carb. 58% light, 100 pounds	1.35@	2.35
Hydroxide, 76% solid, 100 pounds	2.60@	3.75
Spermaceti	.26@	.27
Stearate Zinc	.30@	.31
Styrax	1.40@	1.60
Tartaric Acid	.64	Nom'l
Tragacanth, No. 1	4.00@	4.35
Triethanolamine	.34½	Nom'l
Violet Flowers	1.75@	2.00
Zinc Oxide, U. S. P. bbls.	.10½	.10¾

OILS AND FATS

Castor No. 1, tanks	.13@	
Cocoanut, Manila Grade, c.i.f., tanks	.0835@	
Corn, crude, Midwest, mill, tanks	.12¾@	
Corn Oil, distilled, drums	.16¼@	.16½
Cotton, crude, Southeast, tanks	.12¾@	
Grease, white	.08⅞@	
Lard	.15 22½@	
Lard Oil, common, No. 1 bbls.	.14@	
Palm Niger, drums	.0865	
Peanut, blchd., tanks	.1501@	
Red Oil, distilled, tans	.12@	
Stearic Acid Triple Pressed	.18⅝@	.18⅞
Double Pressed	.15⅞@	.16⅞
Tallow, acidless, barrels	.14¼@	
Tallow, N. Y. C., extra	.08⅝@	
Whale oil, refined	.1232	Nom'l

PLYMOUTH CRYSTAL "E" WHITE OIL

This oil has been the standard for many of America's very oldest cream manufacturers since their origin. It is water-white and crystal-pure . . . odorless and tasteless . . . of U. S. P. Acid Test and free of fluorescence . . . especially refined for the cosmetic industry and as pure as a mineral oil can be made. Because of its extra lightness you should specify it for the soft, light, fluffy creams demanded today.

Other mineral oils of heavier body if desired.

PLYMOUTH PETROLATUMS U. S. P.

All Petrolatums are refined and straight filtered from Pennsylvania Crude. None are acid treated and all are long fiber and of U. S. P grades.

Both soft, low melting point consistencies and pharmaceutical grades . . . as well as the regular grades for the drug and cosmetic industry. All grades are offered from Snow White to Amber.

A *Complete* LINE OF COSMETIC RAW MATERIALS

M. W. PARSONS

9 BEEKMAN STREET NEW YORK N Y U S A

Imports and PLYMOUTH ORGANIC LABORATORIES, Inc.

Telephone BEEKMAN 3-3162—3163—3164

PERFUMERS

BASIC MATERIALS

Burton Bush

BASIC

PERFUME

SPECIALTIES

BUSH AROMATICS

INCORPORATED

136 LIBERTY STREET
NEW YORK CITY

Cable address: ARROBUSH
Telephone: WOrth 2-6557

You get many EXTRAS WITH POWCO NEUTRAL SOAP

Today, modern production methods make it possible to offer POWCO BRAND Pulverized Neutral Soap of the highest quality, standardized for air floated fineness, at an actual saving to you.

We are not merely sellers of Neutral Soap. We furnish expert consultation and assistance on formula and manufacturing problems. This has saved many thousands of dollars for our customers. Let us show you the safe way to cost economies and how *you* can safeguard against production troubles with POWCO BRAND Neutral Soap.

POWCO BRAND
REG. U.S. PAT. OFF.

POWDERED NEUTRAL SOAP

JOHN POWELL & CO.
One Park Avenue
New York 16, N. Y.

Production Control and the Analysis of Cosmetics

by MAISON G. DENAVARRE, Ph.C., B.S.

Technical Editor of the American Perfumer & Essential Oil Review, Expert Consultant, Engineer Board, U. S. Army; Special Lecturer in Cosmetics, Wayne University, College of Pharmacy; Consulting Chemist

Fourteenth Installment

The thirteenth installment was published in the preceding issue. Subsequent installments will appear in forthcoming issues.

ACKNOWLEDGMENTS

"Permission to use for comment parts of the text of the National Formulary, Seventh Edition, in this volume has been granted by the Committee on Publications by authority of the Council of the American Pharmaceutical Association."

"The use in this volume of certain portions of the text of the United States Pharmacopoeia, Twelfth Revision, official November 1, 1942, and of Supplement 1 to the U.S.P. XII, official November 1, 1942, is by virtue of permission received from the Board of Trustees of the United States Pharmacopoeial Convention. The said Board of Trustees is not responsible for any inaccuracy of quotation nor for any errors in the statement of quantities or percentage strengths."

Permission to use certain portions of the "Official and Tentative METHODS OF ANALYSIS of the A.O.A.C." in this volume is granted by the Association of Official Agricultural Chemists. The said Association is not responsible for any inaccuracy of quotation nor for any errors in statement of any quantities or percentages.

Permission to use certain portions of the TOILET GOODS ASSOCIATION Specifications has been granted by the Toilet Goods Association, Inc. The said Association is not responsible for any inaccuracy of quotation nor for any errors in statement of any quantities or percentages.

Permission to use certain portions of the METHODS OF ANALYSIS of the A. A. T. C. C. 1940 Year Book in this volume is granted by the Association American Textile Chemists and Colorists, hereafter referred to as A. A. T. C. C. The said Association is not responsible for any inaccuracy of quotation nor for any errors in statement of any quantities or percentages.

Permission to use certain portions of the Official and Tentative METHODS OF ANALYSIS of the A.O.C.S. in this volume is granted by the American Oil Chemists' Society, hereinafter referred to as A. O. C. S. The said Association is not responsible for any inaccuracy of quotation nor for any errors in statement of any quantities or percentages.

CHAPTER IV

(*continued*)

Physical and Chemical Testing
Gravimetric and Volumetric Methods

C-235—MALIC ACID, TEST FOR—CELSI

(*Merck Index*)

To 2-3 drops of the solution add 2 cc concentrated H_2SO_4 containing orcin, heat on a water bath for 5 minutes, cool and add 10 cc water. Cool again and carefully make alkaline with concentrated ammonia. A distinct fluorescence indicates the presence of malic acid.

C-236—MALIC, CITRIC AND TARTARIC ACIDS, REAGENT AND TEST FOR—ALVAREZ

(*Merck Index*)

The reagent is a solution of 0.02 gm Beta-naphthol in 1 cc of concentrated H_2SO_4.

To about 0.05 gm of the substance to be tested add 10-15 drops of the reagent and cautiously heat the mixture over an open flame. *Malic acid* gives a green-yellow melt which on further heating becomes bright yellow and then dissolves in water with a bright orange-yellow color. *Citric acid* gives a blue melt, which dissolves in water without color, or a light yellow color. *Tartaric acid* gives a blue melt which on further heating becomes green and dissolves in water with yellow-red color.

C-237—MALIC AND SUCCINIC ACIDS REACTION FOR—DE CONINCK

(*Merck Index*)

On gently heating a mixture of saturated aqueous succinic acid and an aqueous suspension of calcium salicylate, a persistent rose-red color develops. Malic acid similarly treated gives only an unstable rose color which on gently boiling for 15-20 minutes gradually disappears.

C-238—MALIC ACID, IDENTIFICATION OF

(*H. Caron and D. Raquet. J. Pharm. chim. 9, 2, 335-6, 1942*)

Hot oxidation with 1 drop of 1 percent $KMnO_4$ of 5 cc of malic acid solution in presence of 2 drops AcOH gives oxalacetic acid; on saturating the solution with $(NH_4)_2SO_4$, adding $Na_2Fe(CN)_5NO$ followed by NH_4OH so as to overlie the solution, a violet ring forms fairly rapidly; on shaking, the solution acquires a violet color which disappears after a few minutes. The test is sensitive to 1:4000. Under the same conditions tartaric acid gives no color; lactic acid in concentrated solution, a stable blue-green color; citric acid, a violet color rapidly turning blue. These colors are stable and cannot be mistaken for the unstable color given by malic acid.

C-239—MANNITOL, REACTION FOR—EKKERT

(*Merck Index*)

Warm 0.2 gm mannitol in 15-20 cc of water with 3 percent bromine water for 15 to 20 minutes, then expel excess bromine by boiling till the liquid is reduced to 5 cc. A drop of this liquid admixed with 0.01 gm of the following substances with subsequent addition of 1 cc of concentrated H_2SO_4 gives various colors in the cold and on warming; With resorcinol, golden-yellow to deep blood-red.

MANUCOL

See Gums-Sodium Alginate C-189

C-240—TOTAL MATTER INSOLUBLE IN ALCOHOL. FREE ALKALI OR FREE ACID

(*A.O.C.S.*)

(1) *Matter insoluble in alcohol.* Digest hot a 2 to 10-grams (0.01 gram) sample with 200 ml of freshly boiled ethyl alcohol neutral to phenolphthalein (94 percent or higher). Filter through a counterpoised filter paper neutral to phenolphthalein, or a weighed Gooch crucible with suction, protecting the solution during the operation from carbon dioxide and other acid fumes. Wash the residue on the paper, or in the crucible, with hot neutral alcohol until free from soap. Dry the filter paper, or crucible and residue at 100° to 105° C for 3 hours, cool, and weigh the total matter insoluble in alcohol. (The matter insoluble in alcohol will contain most of the alkaline salts, such as carbonates, borates, silicates, phosphates, and sulfates, as well as starch, and may be used for the approximate determination of these constituents. These salts are not entirely insoluble in alcohol, so for accurate determinations separate portions of the soap should be used.

(2) *Free alkali or free acid.* Heat the filtrate from the above nearly to boiling, add 0.5 ml of a 1 percent solution of phenolphthalein, and titrate with a standard acid or alkali solution, and calculate the alkalinity to sodium hydroxide (or potassium hydroxide) or acidity to oleic acid.

Note: In testing soaps known to contain little or no alkaline salts, it is unnecessary to filter the hot alcoholic soap solution as described above. However, the filtration should be carried out in all cases where alkaline salts such as silicates, phosphates, borates, etc., are present, since these are known to affect the free alkali determination. The presence of carbonates up to 0.5 percent as Na_2CO_3 does not appreciably affect this determination and filtration may be omitted, if the carbonate determination, on a separate sample, is not in excess of this figure.

(3) *Matter insoluble in water.* Proceed as in the determination of matter insoluble in alcohol, using a separate sample for this determination, and omitting the drying and weighing of the matter insoluble in alcohol. After filtering and thoroughly washing the residue, extract it with water at 60° C, and wash the filter thoroughly. (When the matter insoluble in water is all inorganic, boiling water may be used for the extraction and washing.) Dry the filter and residue at 100° to 105° C for 3 hours, cool, and weigh matter insoluble in water. The nature of this matter may be determined by further examination.

(4) *Total alkalinity of matter insoluble in alcohol.* (Alkaline salts.) Titrate the filtrate from the determination of matter insoluble in water with standard acid, using methyl orange as indicator. Calculate the alkalinity to sodium oxide (Na_2O), and, if desired, to any other basis agreed upon by the parties interested.

C-241—MENTHOL

U.S.P.

The British Pharmacopoeia describes tests for identification that are superior to those in the U.S.P. These tests are applicable to all forms of menthol. To a solution containing 0.01 gm of menthol, add 1 cc of sulfuric acid, 1 cc of a solution containing vanillin in sulfuric acid. Add 1 cc of water which causes a violet color to develop. Dissolve a few crystals of menthol in 1 cc of glacial acetic acid. Add 3 drops of sulfuric acid and 1 drop of nitric acid. No green color develops (distinction from thymol).

MENTHYL ANTHRANILATE

Upon Hydrolysis responds to Test for Menthol & Anthranilate C-47, 48, 49, 241.

MENTHYL SALICYLATE

Upon Hydrolysis Responds to Test for Menthol and Salicylate C-241.

C-242—MERCAPTANS, TESTS FOR—DENIGES

(*Merck Index*)

Dissolve 1 gm of isatin in 100 cc concentrated H_2SO_4. Add an alcoholic solution of a mercaptan to a few cc of this reagent previously mixed with several volumes of concentrated H_2SO_4. A green color is produced.

If aldehydes and higher alcohols are present, test the solution as follows: Shake with NaOH solution, dilute with water, and then add sodium nitroprusside. If mercaptans are present, a red color forms.

C-243—MERCURY

(*U.S.P.*)

Solutions of mercury salts free from excess of nitric acid. when applied to bright copper foil, yield a deposit, which, upon rubbing, becomes bright and silvery in appearance. With hydrogen sulfide, solutions of mercury compounds yield a black precipitate which is insoluble in ammonium sulfide T.S., or in boiling diluted nitric acid.

Mercuric Salts: Solutions of mercuric salts yield a yellow precipitate with sodium hydroxide T.S. They yield also, in neutral solutions, a scarlet precipitate with potassium iodide T.S. very soluble in an excess of the reagent.

Mercurous Salts: Mercurous compounds are decomposed, producing a black color, by sodium hydroxide T.S. Solutions of mercurous salts yield with hydrochloric acid a white precipitate which is blackened by ammonia T.S. With potassium iodide T.S., a yellow precipitate is produced which may become green upon standing.

C-244—MERCURY, AMMONIATED

(*U.S.P.*)

Identification: A. One gm of ammoniated mercury is soluble in a cold solution of 5 gms of sodium thiosulfate in 5 cc of distilled water, with the evolution of ammonia. When this solution is heated for a short time, red mercuric sulfide is precipitated which, upon protracted boiling turns black.

B. When heated with sodium hydroxide T.S., ammoniated mercury becomes yellow and ammonia is evolved.

C. A solution of ammoniated mercury in diluted nitric acid yields with potassium iodide T.S. a red precipitate, which is soluble in an excess of the reagent. The nitric acid solution yields a white precipitate with silver nitrate T.S.

Assay: Dissolve about 0.5 gm of ammoniated mercury, accurately weighed, in 2 cc of hydrochloric acid and 10 cc of distilled water, warming gently until solution is effected, then dilute with 300 cc of distilled water, and proceed as directed under Hydrargyri Bichloridum, beginning with the words, "pass hydrogen sulfide." The weight of mercuric sulfide, multiplied by 0.8622, indicates its equivalent in Hg.

METAPHOSPHATE

See Sodium Hexametaphosphate C-380

C-245—METHENAMINE

Hexamethylenamine, Hexamethylenetetramine

(*U.S.P.*)

Identification: Heat an aqueous solution of methenamine (1 in 10) with diluted sulfuric acid: it decomposes with the liberation of formaldehyde, which is recognized by its odor or by its effect on paper moistened with silver ammonium nitrate T.S. On the subsequent addition of an excess of solution of sodium hydroxide, ammonia is evolved.

Assay: Weigh accurately about 1 gm of methenamine, previously dried over sulfuric acid for 4 hours, place it in a beaker, add 40 cc of normal sulfuric acid, and boil gently, adding a little distilled water from time to time, if necessary, until the odor of formaldehyde is no longer perceptible. Cool, add 20 cc of distilled water, and titrate the excess of acid with normal sodium hydroxide, using methyl red T.S. as the indicator. Each cc of normal sulfuric acid is equivalent to 0.03505 gm of $(CH_2)_6N_4$.

METHOCEL

See Gums-Methyl Cellulose C-189, also Cellulose Derivatives C-123.

C-246—METHYL ALCOHOL IN ETHYL ALCOHOL, DETECTION OF

(*C. W. Ballard and E. F. Hersant*
Quart. J. Pharm. Pharmacol. **15**, *97-103, 1942*)

A decolorized solution of magents prepared by a slight modification of the British Pharmacopoeia method, although not completely colorless, is a sensitive reagent and retains a high degree of sensitivity provided that it is stored under suitable conditions and is used within one month. A color is always obtained in testing pure EtOH owing partly to the incomplete inhibition of the reaction between AcCHO and the reagent, and also to the production of traces of CH_2O on oxidation of EtOH. A satisfactory modification of the official test is suggested.

METHYL CELLULOSE

See C-123

METHYL METHACRYLATE

See Acrylates Under Plastic Resins C-301

METHYL SALICYLATE

Responds to Test for Salicylate C-353

C-247—METHYL UMBELLIFERONE

Methyl Umbelliferone better known as Beta Methyl Umbelliferone, the material is practically insoluble in water and poorly soluble in most organic solvents. It appears as a light gray to a buff-yellow powder. It is quite soluble in alkaline solutions and exhibits a strong fluorescence in daylight. Under ultraviolet light, a rich, bluish-white fluorescence is manifest. Other umbelliferones give the same test.

C-248—SOLUBLE MINERAL MATTER

(*A.O.C.S.*)

Place the combined kerosene filtrate and kerosene washings from the insoluble impurities determination in a platinum, or silica dish. Place in this an ashless filter paper folded in the form of a cone, apex up. Light the apex of the cone, whereupon the bulk of the kerosene burns quietly. Ash the residue to constant weight in a muffle, taking care that the decomposition of alkaline earth carbonates is complete, and report the result as Soluble Mineral Matter.

NOTE. For routine work, an ash may be run on the original fat, and the soluble mineral matter obtained by deducting the ash of the insoluble impurities from this. In this case the Gooch crucible should be prepared with an ignited asbestos mat so that the impurities may be ashed directly after being weighed. Ignition should always be to constant weight so as to insure complete decomposition of carbonates.

When the percentage of soluble mineral matter amounts to more than 0.1 percent, multiply the percentage by 10 and report as Fatty Acids Combined as Mineral Soap. When the ash contains phosphates the factor 10 cannot be applied and the following method must be employed.

Determination. Add to the ash a few drops of a strong solution of ammonium carbonate, evaporate to dryness, heat in an oven at 105° C to remove excess of ammonium carbonate, cool, and weigh. Multiply the increase in weight by the factor 12.8, calculate to percentage, and report the figure as Fatty Acids Combined as Mineral Soap.

Soluble mineral matter represents mineral matter combined with fatty acids in the form of soaps in solution in the fat or oil. Formerly, this mineral matter was often determined in combination by weighing the separated metallic soap or by weighing it in conjunction with the insoluble impurities. Since the soaps present consist mostly of lime soap, it has been customary to calculate the lime present therein by taking 0.1 the weight of the total metallic soaps. The standard method as given above is direct and involves no calculation. The routine method given in the note has been placed among the methods because it is used in some laboratories. This method cannot be considered accurate, however, for insoluble impurities may vary from sample to sample to a considerable extent and the error due to the presence of large particles of insoluble impurities is thus transferred to the soluble mineral matter. The Committee has found one type of grease, naphtha bone grease, which shows most unusual characteristics. The type sample contained 4.3 percent of soluble mineral matter by the Committee method, which would be equivalent to 43.0 percent of free fatty acid. The kerosene and gasoline filtrate was particularly clear; nevertheless, the ash was found to contain 36.43 percent P_2O_5, equivalent to 79.60 percent of $Ca_3(PO_4)_2$ and 9.63 percent of Fe_2O_3. The method, therefore, determines the soluble mineral matter in this case satisfactorily, but the factor 10 is not applicable for calculating the fatty acids combined therewith. It is therefore necessary, in order to determine the fatty acids combined with soluble mineral matter in the original sample, to carbonate the ash as directed, and apply a definite factor. This method gives the increase in weight due to any constituents in the ash which will take up the CO_3 radical from ammonium carbonate, and this is true particularly of lime.

Although the Committee has speculated on the form of chemical combination in which the phosphate exists, no definite conclusion has been reached.

When, in addition to lime soaps and possibly phosphates, iron soaps are also present in notable quantity, as in some low-grade greases, it becomes necessary to determine all the various bases present and to calculate the amount of fatty acid capable of combining with each. But when any sample requires so much additional analytical work, it would seem to be good practice for the seller and buyer to agree to having the product acid-washed in order to remove mineral bases and then proceed with the adjustment. In many cases, however, this is not possible.

C-249—MOLYBDATES

Acidify 5 cc of solution with nitric acid, and add 1 cc sodium phosphate T.S. Warm, a yellow precipitate denotes the presence of molydates.

Acidify about 5 cc of solution with HCl, add a few drops of potassium xanthate solution. An intense red color denotes molybdates. The reaction is quite specific. If more than traces of molybdates are present, the color separates as oily drops and can be dissolved in chloroform.

C-250—MONOCHLORACETIC ACID

Identification of as Barium Monochloracetate

(J. B. Wilson & G. L. Keenan
J. Assoc. Off. Agric. Chem. **27**, *446, 1944)*

To 100 ml of solution containing 50 mg or more monochloracetic acid, add 3 ml of H_2SO_4 and extract with an equal volume of ether in a separatory funnel. In cases where emulsions form, extract in an automatic extractor for 1 or 2 hours. Transfer the ether extract to a separatory funnel and add a few drops of phenolphthalein indicator. Now add 5 ml of $\pm$ 0.1 *N* $Ba(OH)_2$ and shake for 30 seconds. If the water layer takes on the pink color of phenolphthalein, transfer through a filter paper to a small beaker. Add $\pm$ 0.05 *N* acetic acid until colorless and evaporate to 1-2 ml on the steam bath. Allow the remaining liquid to evaporate spontaneously in the air and finally in a desiccator. If 5 ml of $Ba(OH)_2$ does not give a pink water layer, add 5 ml more and shake before separating. Repeat the extraction with $Ba(OH)_2$ several times or until a pink solution is obtained, evaporating each barium solution in a separate beaker. Examine the crystals under the polarizing microscope.

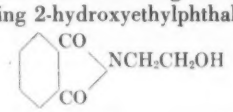
MINERAL OIL

See Petrolatum Liquid C-287

C-251—MONOETHANOLAMINE, IDENTIFICATION OF

(Bernhard Keiser,
Ind. & Eng. Chem. Anal. Ed. **12**, *284, 1940)*

In aqueous solution 2-aminoethanol (ethanolamine, monoethanolamine) can be identified readily by reacting with phthalic acid and confirming the melting point, 127° C, of the resulting 2-hydroxyethylphthalimide.



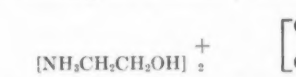
Procedure. Mix equimolar proportions of phthalic acid and the 2-aminoethanol—for example, dissolve 0.166 gram of phthalic acid in hot water and add it to the aqueous solution containing 0.061 gram of 2-aminoethanol. The concentration of 2-aminoethanol in the sample must be assumed or be determined by some means such as titration with hydrochloric acid. One cubic centimeter of 1 *N* hydrochloric acid = 0.061 gram of 2-aminoethanol.

Evaporate the solution to dryness and heat the residue at 210° C for about 5 minutes. 2-Hydroxyethylphthalimide will be formed in quantitative yield. Recrystallize from water, or, if inorganic impurities such as potassium chloride or sulfate are present, from an anhydrous solvent such as benzene or absolute alcohol. The resulting diamond-shaped plates melt at 127° C.

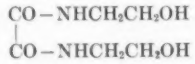
Conversely, this reaction can be used for the identification of phthalic acid.

Identification by Oxalic Acid

2-Aminoethanol can also be identified in aqueous solution by reacting with oxalic acid and confirming the melting point, 199-200° C uncorrected (correction, + 3.8° C), of the resulting salt formed by the oxalic acid and the amine.



In addition, this salt may be converted to N,N'-bis-(2-hydroxyethyl)-oxamide, which has a melting point of 168° C uncorrected (correction, + 2.4° C).



Procedure. Mix equimolar proportions of oxalic acid and 2-aminoethanol—for example, dissolve 0.090 gm of oxalic acid in water and add it to the aqueous solution containing 0.061 gm of the 2-aminoethanol. Evaporate the solution to dryness and heat the residue at 110° C for 5 minutes. Recrystallize from 70 percent alcohol. The resulting elongated hexagonal plates melt with decomposition, at 199-200° C, uncorrected. The salt is very soluble in water, and insoluble in absolute alcohol or glacial acetic acid.

Analysis for $C_6H_{16}O_6N_2$: calculated, N 13.20, oxalic acid 42.5; found, N 12.65, oxalic acid 44.0 percent.

If heated past the melting point to about 222° C, brisk boiling occurs with formation in good yield of N,N'-bis-(2-hydroxyethyl)-oxamide, melting point 168° C, uncorrected. This material, prepared in a different manner, has been previously described.

This reaction may also be used for the identification of oxalic acid.

C-252—MORPHOLINE, DETERMINATION OF

(*L. S. Malowan.*

Mikro-chemie ver. Mikrochim. Acta. **28,** *285-8, 1940*)

If an alkaline solution of HgI_2 (Nessler's solution) is added to a dilute aqueous solution of morpholine, this cyclic amine gives fine, white crystals consisting of HgI_2 united with several molecules of the base. The damp crystals decompose readily so that the analysis is difficult but the product contains approximately 2.8 percent N. (*From C. A.* **34,** *7782, 1940.*)

C-253—MORPHOLINE, DETERMINATION OF

Shupe's Method

Qualitative Tests: Microchemical tests—Place a drop of a water solution of morpholine sulfate of the concentration specified below on a glass slide. Add a drop of the reagent and examine the crystals formed with a microscope. Compare with a known specimen of morpholine.

Concentration of Morpholine Sulfate	Reagent
1 in 200	Modified Kraut's
1 in 200	Reinecke salt (sat'd. water solution)
1 in 1000	Phosphotungstic acid (5% in water)

Color test—To a solution containing about 0.2 percent morpholine or its salt, add an equal volume of a mixture containing 1 gm of sodium nitroprusside and 10 ml of acetaldehyde in 100 ml of water. Add sufficient 2 percent $NaHCO_3$ solution to assure an alkaline reaction. After a few seconds a blue color is formed, which gradually fades to a brown.

Quantitative Procedures: Steam distillation—Transfer a measured portion of sample to a flask fitted for steam distillation. Add an equal volume of 50 percent w/v NaOH solution and steam distil. Collect about 25 ml of distillate for quantities up to 100 mg of morpholine. Test additional distillate for complete evolution of morpholine. Add a drop of methyl red indicator to the distillate and titrate with standard H_2SO_4.

p-Brombenzene sulfonyl derivative—Make slightly acid an aliquot of the titrated steam distillate containing 5-25 mg of morpholine and evaporate to about 10 ml if necessary.

Dissolve approximately 0.25 gm of the p-brombenzene sulfonyl chloride in 10 ml of acetone and add to the solution of the morpholine. Then add approximately 2 gm of powdered $NaHCO_3$. Stir the mixture, and let stand for 15 minutes; heat to boiling on a steam bath and add 15 ml of water. Continue the heating for about 15 minutes until the acetone has evaporated. Add 25 ml of 2 percent w/v NaOH solution and let stand at about 4° C for a few hours or overnight. Collect the precipitate in a tared Gooch crucible and wash with water. Dry in an oven at 100° C for 1 hour and weigh the p-brombenzene sulfonyl morpholine.

p-brombenzene sulfonyl derivative x 0.285 = morpholine.

The derivative melts at 153° C.

Recovery of morpholine from creams and lotions—The isolation of morpholine from creams and lotions is often complicated by the presence of other emulsifying agents. A preliminary separation for their removal may be necessary. For creams the samples may be heated with 10 ml of 5 percent hydrochloric acid to break emulsions and to decompose soaps. The oily material may then be dissolved in ether and the aqueous extract subjected to steam distillation.

C-254—MORPHOLINE, A COLOR REACTION OF

(*E. W. Roth, Chem. Anal.* **30,** *No. 3, 72, 1941*)

When nitrobenzene is added to morpholine, or the reverse, a rose colored mixture is obtained. This rose color soon changes to yellow, the speed of the change depending on the temperature.

MYRISTATES

Same Test as for Laurates C-268

C-255—NAPHTHENIC SULFONATES

(*A.A.T.C.C.*)

These are used as dispersing agents for mineral oils and waxes. They are usually present in such small amounts that it would be impractical to attempt a quantitative estimation. Naphthenic sulfonates may be tested for qualitatively as follows: Extract a small piece of the fabric with petroleum ether. Evaporate the ether from the extract and ash the residue. Dissolve the ash in a small amount of distilled water and acidify with dilute hydrochloric acid. Add a few drops of barium chloride solution. A precipitation of white barium sulfate indicates the presence of naphthenic sulfonates in the original extract.

C-256—NITRATE

(*U.S.P.*)

When a solution of a nitrate is mixed with an equal volume of sulfuric acid, the mixture cooled, and a solution of ferrous sulfate superimposed, a brown color is produced at the junction of the two liquids. When a nitrate is heated with sulfuric acid, and metallic copper, brownish-red fumes are evolved. Nitrates do not decolorize acidified potassium permanganate T.S. (difference from nitrites).

When the nitrogen content of the substance is known to

be low, the half-normal hydrochloric or sulfuric acid may be replaced by tenth-normal acid and tenth-normal alkali should then be used in titrating the excess of acid. One cc of tenth-normal hydrochloric or sulfuric acid is equivalent to 0.0014008 gm of nitrogen.

With Nitrates Present—Place a quantity of the substance, accurately weighed, corresponding to about 0.15 gm of nitrogen, in a 500-cc Kjeldahl flask of hard glass, and add thereto 25 cc of sulfuric acid in which 1 gm of salicylic acid has previously been dissolved. Mix the contents of the flask thoroughly, and allow the mixture to stand for 30 minutes with frequent shaking. Add to the mixture 5 gm of powdered sodium thiosulfate and again mix thoroughly, then add 0.5 gm of powdered cupric sulfate and proceed as directed previously for Nitrates and Nitrites Absent, beginning with "Incline the flask at an angle of about 45°."

When the nitrogen content of the substance is known to exceed 10 percent, from 0.5 to 1.0 gm of benzoic acid may be added, prior to digestion, to facilitate the decomposition of the substance.

Note—There are certain alkaloids and other nitrogen-containing organic compounds that will not yield all of their nitrogen to digestion with sulfuric acid, and this method, therefore, cannot be used for the determination of nitrogen in all organic compounds.

C-257—NEOCALAMINE

(*Bull. N. F. Comm.* **10**, *271, 1942*)

Assay: Transfer about 0.15 gm, accurately weighed, of prepared Neocalamine, previously ignited and cooled into a 400 cc beaker and dissolve as completely as possible in 3 cc of HCl. Neutralize with ammonia T.S. using a piece of litmus paper dropped into the solution. Add an excess until the white precipitate first formed is redissolved leaving a flocculent precipitate of ferric hydroxide. Filter and wash with distilled water. Neutralize the filtrate with dilute HCl and add 3 cc in excess. Dilute to 200 cc, heat to boiling, reserve about half the solution and add 1 cc of aqueous solution of ferrous ammonium sulfate (1-1000) and 0.2 cc of 1 percent solution of potassium ferricyanide to half the filtrate. Titrate the hot solution with the normal potassium ferrocyanide until the blue color changes to green, then add 50 cc of reserve solution and again titrate just past the end point. Repeat using 25 cc and finally add the last reserve and very slowly titrate to final end point.

The tenth-normal ferrocyanide solution is standardized by titrating zinc dissolved in HCl and treated in the same manner as the prepared calamine. This solution should be standardized each time it is used, although it changes less if allowed to stand overnight or a few days before use.

C-258—NITROGEN (TOTAL BY THE KJELDAHL METHOD)

(*U.S.P.*)

Nitrates and Nitrites Absent—Place about 1 gm of the substance, accurately weighed, in a 500-cc Kjeldahl flask of hard glass. The material to be tested, if solid or semi-solid, may be wrapped in a sheet of nitrogen-free filter paper for convenience in transferring it to the flask. Add 10 gm of powdered potassium sulfate or anhydrous sodium sulfate, 0.5 gm of powdered cupric sulfate, and 20 cc of sulfuric acid. Incline the flask at an angle of about 45° and gently heat the mixture, keeping the temperature below the boiling point of the mixture until frothing has ceased. Increase the heat until the acid boils briskly, and continue the heating until the solution has been clear green in color for 30 minutes.

Allow the mixture to cool, add 150 cc of distilled water, thoroughly mix the contents of the flask, and cool again. Add cautiously 100 cc of a 30-percent aqueous solution of sodium hydroxide, added so as to cause the solution to flow down the inner side of the flask to form a layer under the acid solution. Add a few pieces of granulated zinc, connect the flask, by means of a Kjeldahl connecting bulb, with a condenser, the delivery tube from which dips beneath the surface of a mixture of 30 cc of half-normal hydrochloric or sulfuric acid and 25 cc of distilled water contained in an Erlenmeyer flask or a wide-mouth bottle of about 500-cc capacity. Mix the contents of the Kjeldahl flask by gentle rotation, and distil until about two-thirds of the contents of the flask has distilled over. Add about 5 drops of methyl red T.S. to the contents of the receiving flask and determine the excess of acid by titration with half-normal sodium hydroxide. Run a blank test and make necessary corrections. Each cc of half-normal acid consumed is equivalent to 0.007004 gm of nitrogen.

C-259—OINTMENT, AMMONIATED MERCURY

(*U.S.P.*)

Assay: Place in a separator about 3 gm of ammoniated mercury ointment, accurately weighed. Warm it slightly to soften the ointment and while rotating add 75 cc of ether, and then shake the mixture until the ointment base is dissolved. Add 10 cc of a mixture of equal volumes of hydrochloric acid and distilled water and shake it vigorously until all of the ammoniated mercury has dissolved. Filter the aqueous layer that separates into a 250 cc beaker and wash the remaining ether solution with several portions of 10 cc each of distilled water until the last washing produces no turbidity with silver nitrate T.S.

Dilute the hydrochloric acid solution and the combined washings to about 150 cc, add 5 cc of hydrochloric acid, and precipitate with hydrogen sulfide gas. Collect the precipitate in a tared Gooch crucible and wash it successively with distilled water, with two 10 cc portions of alcohol, two 10 cc portions of carbon tetrachloride, using no suction, and finally wash with 10 cc of ether. Dry the crucible and contents to constant weight at 100° C. The weight of mercuric sulfide so obtained, multiplied by 0.862, represents the quantity of mercury in the quantity of the ointment taken for the assay.

C-260—OINTMENT BENZOIC ACID COMPOUND

(*D. C. Garratt, Quart. Jour. Pharm.* **8**, *472, 1935*)

Weigh out about 3 to 4 gm of the ointment and transfer it to a separator by means of ether. Add 2 percent potassium hydroxide solution, using some of this to wash out the original beaker, and then add a large amount (about 50 mils) of light petroleum (boiling point, 40° to 60°). Shake and separate. Repeat the operation 3 times, allowing any slight emulsion to pass through into the aqueous layers. Wash the mixed aqueous layers with ether and add the washings to the main bulk of organic solvents.

C-261—OINTMENT BORIC ACID (*U.S.P.*)

Assay: Weigh accurately about 5 gm of boric acid oint-

ment in a tared Erlenmeyer flask of suitable capacity. Add 30 cc of hot distilled water, and heat for 15 minutes on a water bath with frequent agitation. Filter while hot through a wetted filter into a 100-cc volumetric flask. Wash the Erlenmeyer flask with several portions of hot distilled water, filtering the washings into the volumetric flask. Cool, dilute the filtrate with distilled water to exactly 100 cc and mix well. To exactly 20 cc of the filtrate, representing one-fifth of the weight of boric acid ointment taken, add 20 cc of glycerin, previously neutralized to phenolphthalein T.S. Titrate with tenth-normal sodium hydroxide, using phenolphthalein T.S. as the indicator. Discharge the pink color by the addition of 20 cc of glycerin neutral to phenolphthalein T.S., and again titrate until the pink color reappears. Each cc of tenth-normal sodium hydroxide is equivalent to 0.006184 gm of H_3BO_3.

C-262—OINTMENT OF CAMPHOR

(Bull. Natl. Form. Comm. ***13,*** *34, 1945)*

Assay: Place approximately 5 gm of ointment of camphor in a 100-cc weighing bottle, accurately weigh, and fit with a 2-hole rubber stopper. Through 1 hole pass an aeration tube leading to within 15 mm to 20 mm of the bottom of the weighing bottle. Through the other hole pass a glass tube, of the same diameter as that of the aeration tube, which will extend about 1 cm above and below the stopper. Connect the aeration tube with a cylinder of air-free carbon dioxide. Place the weighing bottle and ointment thus prepared in an air oven at 100° and pass a steady stream of carbon dioxide through the apparatus for 2 hours or until no further loss of weight is detectable. Remove the apparatus from the oven, blow out the remaining carbon dioxide with dry air, cool the weighing bottle in a desiccator and weigh.

C-263—OINTMENT, PHENOL, AN EXTRACTION PROCESS FOR THE ASSAY OF

(R. M. Savage Quart. J. Pharm. & Pharmacol. ***12,*** *420-422, 1939)*

Dissolve about 0.5 gm of ointment in approximately 10 mils of light petroleum. Extract this solution with four successive quantities of 10 mils each of a solution of 7 mils of concentrated hydrochloric acid and 33 mils of water, shaking for two minutes on each occasion. Collect the extracts in a Wijs iodine flask, add 20 mils of $N/10$ bromate-bromide, and complete the analysis in the usual way. There is enough acid in the extracting liquid for the remainder of the process. Emulsions, if formed, are coarse and cause no trouble. A quantity of ointment was made by using a stoppered bottle as described by Smelt, so that the ointment containing 2.57 percent of phenol, C_6H_6O. Two analyses as described gave results 2.56 and 2.59, equivalent to 99.6 percent and 100.8 percent of the theoretical amount.

C-264—OINTMENT RESORCIN COMPOUND

(D. C. Garratt, Quart. Jour. Pharm. ***8,*** *476, 1935)*
(B.P.C. Formula)

The moisture is determined by xylene distillation on about 25 gm. The figure obtained will include the moisture from the starch. For general analysis divide the ointment into two parts by extraction in a Soxhlet thimble, first with acetone and then with light petroleum. Remove the solvent and without further heating extract the resorcin with water, weighing out about 3 to 4 gm of the well-stirred ointment into a wide-mouthed flask, extract with warm water three times, chilling the mixture, but in the present case filtering through a wet filter paper. The resorcin solution will be rather cloudy but this does not interfere with the estimation which is carried out as above with $N/10$ bromate on an aliquot portion. Dry the fat as usual, weigh and determine the two-hour saponification value. Small discrepancies will occur owing to the presence of the birch tar oil which is partly volatile. Dry and weigh the insoluble matter from the solvent extraction. Determine the zinc and bismuth by any of the many methods available. The following method is used by the writer.

Dissolve 0.3 to 0.4 gm of well-mixed matter insoluble in light petroleum by heating with a few mils of 1:1 hydrochloric acid. Dilute and precipitate bismuth sulfide with hydrogen sulfide, filter and wash. Dissolve the precipitate in nitric acid and a little bromine, dilute, boil off excess bromine, make faintly alkaline with ammonia, add ammonium carbonate solution. Boil for ten minutes, add 1 mil of strong ammonia, filter, wash, ignite the bismuth to bismuth oxide and weigh. Bi_2O_3 x 1.25 equals bismuth subnitrate. Add hydrochloric acid and much ammonium chloride to the filtrate from the bismuth precipitate. Warm and titrate the zinc with standard ferrocyanide solution, using uranium acetate as external indicator. The sum of the zinc oxide and bismuth subnitrate subtracted from the total insoluble matter gives the percentage of dry starch present. Calculate the moist starch using an average moisture figure of 12 percent. Subtract the starch moisture from the total moisture to obtain the percentage of water added.

C-265—OINTMENT, SULFUR

(U.S.P.)

Assay: Place about 0.5 gm of sulfur ointment in a tared Erlenmeyer flask of suitable capacity, and weigh accurately. Add 5 cc of nitric acid and 3 cc of bromine, and heat the mixture gently until the excess of bromine has been dissipated. Add 50 cc of distilled water and transfer the mixture to a separator. Extract the liquid with three successive portions of 30, 20 and 10 cc of ether, respectively, to remove the ether soluble ingredients. Wash the combined ether extracts with about 10 cc of distilled water, and add this washing to the aqueous solution. Dilute the aqueous solution to about 200 cc with distilled water, and acidify with hydrochloric acid. Heat the solution to boiling and add hot barium chloride T.S. in small portions until no further precipitation takes place. Heat on a water bath for 1 hour, then collect the precipitate on a filter, wash it well with hot distilled water, dry and ignite to constant weight. The weight of the barium sulfate thus obtained, multiplied by 0.1373, indicates its equivalent of sulfur.

C-266—OINTMENT, ZINC OXIDE

(U.S.P.)

Calcium Magnesium and Other Foreign Substances: Add to the residue obtained in the assay 6 cc of diluted hydrochloric acid: no effervescence occurs. Heat the mixture on a steam bath for 10 to 15 minutes: not more than a trace of insoluble residue remains. Filter the solution, dilute

the filtrate with distilled water to 10 cc, add ammonia T.S. until the precipitate first formed redissolves, then add 2 cc each of ammonium oxalate T.S. and sodium phosphate T.S.; not more than a slight turbidity is produced in five minutes.

Assay: Weigh accurately in a tared porcelain crucible about 2 gm of zinc oxide ointment, heat it gently until melted, and continue the heating gradually raising the temperature until the mass is thoroughly charred. Ignite the mass strongly until all of the carbonaceous material has been dissipated and the residue is uniformly yellow and the weight is constant. The increase in weight of the crucible represents the quantity of zinc oxide in the weight of the ointment taken for the assay.

C-267—OLEIC ACID, REACTION FOR—LIFSCHUTZ

(*Merck Index*)

Dissolve 1 drop of oleic acid in 3.4 cc of glacial acetic acid, add 1 drop of water-free 10 percent chromic acid solution in glacial acetic acid and mix. Now add 10-12 drops of concentrated H_2SO_4 and allow the mixture to stand. The color quickly becomes blanched and changes to violet or cherry-red. Saturated acids do not give this reaction. The spectrum shows a broad absorption band in the green close to the blue, a narrow weaker band nearer the yellow and a still weaker band between the yellow and gold. Glycerides of oleic acid also give the reaction.

C-268—OLEIC AND LAURIC ACIDS, REACTION FOR—LUDWIG-HAUPT

(*Merck Index*)

To a solution of 0.5 gm aniline hydrochloride in 25 cc 96 percent alcohol, add a mixture of 5 cc 1 percent alcoholic furfural solution with 1 cc phenol, and then add enough (about 10 drops) 5 percent ammonia until the mixture has become yellowish-red. The reagent is ready for use after standing for two hours.

Acids of the lauric acid series, $C_nH_{2n}O_2$, give a bright red color with this reagent, while the oleic acid series, $C_nH_{2n-2}O_2$, gives a yellow color.

C-269—OLIVE OIL

(*U.S.P.*)

Cottonseed Oil—Mix 5 cc of olive oil in a test tube with 5 cc of a mixture of equal volumes of amyl alcohol and a 1 percent solution of precipitated sulfur in carbon disulfide, warm the mixture carefully until the carbon disulfide is expelled, and immerse the test tube to one-third of its length in a boiling, saturated aqueous solution of sodium chloride: the mixture develops no reddish color within 2 hours.

Peanut Oil—Saponify 10 gm of olive oil by heating it for 1 hour under a reflux condenser with a solution of 4 gm of potassium hydroxide in 80 cc of alcohol. Neutralize exactly with diluted acetic acid, using phenolphthalein T.S. as the indicator and wash into 120 cc of boiling lead acetate T.S. Boil the mixture for 1 minute and cool by immersing the flask in cold water and occasionally rotating contents to cause the precipitate to adhere to the sides of the flask. Decant the liquid, wash the precipitate with cold water to remove the excess of lead acetate, and then wash with 90 percent alcohol (by volume). Add 100 cc of ether, stopper the flask well, and allow it to stand until the precipitate is disintegrated. Connect with a reflux condenser, boil for 5 minutes, cool to about 15° C, and allow it to stand overnight. Filter, and thoroughly wash the precipitate of lead soaps with ether, alternating with diluted hydrochloric acid at the end if a little of the precipitate adheres to the filter paper. Add enough diluted hydrochloric acid to make the total acid layer measure about 100 cc, and enough ether to make the total ether layer measure about 100 cc, and shake the mixture vigorously for several minutes. Allow the layers to separate, draw off the acid layer, and wash the ether once by shaking with 50 cc of diluted hydrochloric acid and then with several portions of distilled water until the last washing is not acid to methyl orange T.S. Transfer the ether solution to a dry flask, evaporate the ether, add a little dehydrated alcohol, and evaporate on a water bath. Dissolve the dry fatty acids by warming with 60 cc of 90 percent alcohol, by volume, slowly cool the solution to 15° C, shaking frequently to aid crystallization, and allow the mixture to stand at 15° C for 30 minutes: no crystals separate from the mixture.

Sesame Oil—Mix 10 cc of olive oil with 10 cc of hydrochloric acid, add 0.1 cc of an alcoholic solution of furfural (1 in 50), and shake the mixture vigorously for 15 seconds: no pink to crimson color appears in the acid layer when the emulsion breaks. Should any color appear in the acid layer, add 10 cc of distilled water, and again shake the mixture vigorously. In the absence of sesame oil, the pink color is fugitive.

Teaseed Oil—In a dry test tube of approximately 18 x 150 mm place 0.8 cc of acetic anhydride, 1.5 cc of chloroform, and 0.2 cc of sulfuric acid. Mix, and cool in a water bath to 25° C. Add 7 drops of olive oil (approximately 0.2 gm), mix well and cool again to 25° C. If the solution is cloudy, add acetic anhydride, drop by drop, shaking after each addition, until the solution suddenly clears. Allow the mixture to remain in the water bath for 5 minutes: it shows a green color by both reflected and transmitted light. Add 10 cc of anhydrous ether, and mix by inverting the tube. The initial green color fades to a brownish gray. Before diluting with the ether, teaseed oil will cause a brown color to appear by transmitted light, and after diluting a transient red color.

C-270—OLIVE OIL

(*A.O.C.S.*)

Beilstein Test for the Detection of Halogenated Solvents in Oil. A copper wire that has been previously heated in the Bunsen flame until no green color is imparted, is then dipped into the oil to be tested. It is then placed in the flame. Any traces of chlorine in the oil will give a strong green color to the flame. This test can be applied to oils in general.

Coin Test for Sulphur Olive Oils (Carbon Bisulphide Extracted). Pour approximately 20 ml of the oil to be tested into a large test tube. Suspend a bright new dime by means of a glass rod so shaped for the purpose, or upon broken pieces of glass, in such a way that it is completely surrounded by the oil. The test tube is then placed in an oil bath and so heated that the oil in question reaches a temperature of 210° C, within one-half hour. Maintain this temperature for at least ten minutes longer. After cooling, the coin is examined for color. If it is definitely tarnished, or blackened, the test is positive, and indicates the presence of sulphur compounds in the oil tested.

Silver Benzoate Test for Sulphur Olive Oils (Carbon

Bisulphide Extracted). Heat 5 ml of the filtered oil to be tested in a small test tube placed in an oil bath already at a temperature of above 150° C so that the oil in the test tube reaches 150° C in five minutes at the most. This is to prevent scorching of the oil or undue contact with heat, as the silver benzoate test is a sensitive one. The tube is removed from the bath. A pinch of powdered silver benzoate is dropped into the oil and shaken at once. Any sulphur compounds present will almost immediately darken the oil appreciably as compared against the same oil untreated with benzoate but heated at the same time to the same degree of temperature.

C-271—ORGANIC ACIDS, MICRO-TEST FOR—STEENHAUER

(*Merck Index*)

Anthranilic, benzoic, cinnamic and salicylic acids give crystalline compounds with a reagent composed of 4 cc of 10 percent cupric sulfate solution, 1 cc pyridine and 5 cc water.

C-272—OXIDIZING AGENTS

Make a saturated solution of manganous chloride in concentrated hydrochloric acid. Add a few cc of this to a solution of the questionable substance. A brown color turning black denotes the presence of an oxidizing agent. *Caution:* This reaction may be violent.

C-273—PARAFFINS, NATURAL AND ARTIFICIAL SOFT

(*H. Brindle, Quart. J. Pharm. & Pharmacol.* **12**, *361-379, 1939*)

The writer believes that it is possible to differentiate between genuine, or so-called natural, soft paraffin and "artificial" soft paraffin and mixtures of these. The test and criteria used are as follows:

Exactly 1 gram of the sample is placed in a glass tube about 1 to 1.5 cm in diameter and 12 cm long and graduated in 0.1 mil to at least 7 mils from the bottom. The tube is gently warmed to melt the sample and get it near the bottom of the tube. Exactly 5 mils of a solvent consisting of equal volumes of carbon tetrachloride and glacial acetic acid is added and the tube immediately closed with a cork through which a thermometer passes so that the bulb and a portion of the stem are immersed in the liquid. Solution of the soft paraffin is effected by immersing the tube in water at about 10° C above the solution temperature to a height a little above that of the liquid in the tube and keeping the tube shaken. A temperature of 45° to 55° C is sufficient for most samples, but occasionally a higher temperature is required. A clear solution will result in a few seconds and the tube is then immersed in the warm water for about five or ten seconds nearly to the top in order to warm the sides, and the tube is rotated rapidly in a slanting position to ensure that any soft paraffin on the sides is dissolved. The tube is now shaken and immersed in water at about 5° C above the solution temperature which, if necessary, can be determined roughly by allowing the tube to cool in air. The tube is allowed to cool slowly, about 1° C per minute is suitable, and at the first sign of deposition is shaken, keeping it immersed in the water. The deposition temperature, practically the solution temperature, is usually sharply marked by the rapid formation of a heavy deposit.

If deposition begins at a high temperature, e.g. about 60° to 70° C and the precipitate is granular or flaky and forms slowly, the presence of ceresine is indicated. Genuine soft paraffin gives an oily deposit which forms sharply. The deposition temperature is noted and the tube and contents allowed to cool in the water and then to stand securely closed for two or three hours or longer. The volume of the crystalline deposit, if any, is noted. Taking care to avoid shaking, the tube is then immersed in water at 35° to 40° C. All samples, except those containing ceresine, will clarify at this temperature and with genuine soft paraffins an oily layer, called in this paper the upper layer, will be observed. The volume of this is noted.

The following are the conclusions which the writer has reached regarding the characters which may be expected in the case of commercial samples:

(1) Deposition temperature usually above 35° C.
(2) Crystalline deposit not more than 4 mils.
(3) Upper oily layer not less than 1 mil.

In any exceptional case where the deposition temperature is lower than 35° C conditions (2) and (3) must be complied with and should be made rather more stringent, for example, oily layer not less than 1.5 mils and crystalline layer not more than 2 mils. Since many samples had deposition temperatures well above 40° C, crystalline deposits almost nil and an upper oily layer up to 2 mils, it is certain that samples containing some liquid and hard paraffin would comply with the above requirements. As a result of wider experience with the test it will probably be possible to propose stricter requirements. Users desiring uniformity and good quality could demand a deposition temperature above 40° C, upper oily layer not less than 1.5 mils and a crystalline deposit of not more than 3 mils.

The test is more sensitive if double quantities are used, but this is not usually necessary.

C-274—PARAFORMALDEHYDE

See Formaldehyde C-163

C-275—PARAFFIN IN SKIN CREAMS

(*H. D. Murray, J. Soc. Chem. Ind.* **51**, *No. 50, 393-T, 394-T, 1932*)

Ten cc of concentrated sulphuric acid are added to the unsaponifiable matter, and the mixture is heated on the water-bath for an hour with constant stirring. It is then diluted cautiously with 150 cc of water, 2 gm of activated charcoal are added, and the mixture is shaken, mixed with 25 cc of light petroleum and allowed to separate. The solvent is washed with a little water and filtered, and the paper washed with a little light petroleum. The filtrate is evaporated in a weighed dish. If not clear, 2 gm more charcoal are stirred in, the mixture is extracted with two lots of 20 cc of light petroleum, and the extract is filtered, evaporated, and weighed.

C-276—PAPER, CREASING OF, FOR WATER VAPOR PERMEABILITY TESTS

(*Paper Trade J.*, **118**, *1944, 9th Mar. T.A.P.P.I. Sect., 81*)

In testing paper for food packaging for resistance to water vapor it is important to take the effects of creasing into account, and the following standard method (T.A.P.P.I. T465, sm-44) is suggested for ensuring that a standard type of crease is made. Cut a square specimen (area, 60 to 137 cm), and condition it in the usual way. Make

a series of creases along straight lines parallel to one edge at 0.75 in. intervals, folding each face of the paper alternately, so as to produce a camera bellows effect; unfold each crease before making the next. Repeat these operations so as to obtain another set of similar creases at right angles to the first set. Cut a specimen of suitable size from the creased sheet, and test it in the usual way (cf *Analyst* **69**, *197, 1944*). To ensure a standard creasing procedure, first make a preliminary light crease in the paper with a flat strip of wood or metal on a flat metal or glass plate of suitable dimensions. Then complete the crease by lowering on to it, gently, a suitably loaded square metal or glass plate, whose length is about 0.5 in. greater than that of the specimen to be creased, and whose weight in kg equals the length in cm of the specimen. (Through *The Analyst* **69**, *227, 1944*).

C-277—PARA-HYDROXY BENZOATE, DETECTION OF, IN THE PRESENCE OF SALICYLATES

(S. G. Stevenson & J. C. L. Resuggan, Analyst **63**, *page 152, 1938)*

This test works only on the free acids and therefore the methyl, ethyl, propyl, butyl and benzyl esters as well as their sodium derivatives must first be hydrolyzed by saponifying with sodium or potassium hydroxide, liberating the free acid with hydrochloric acid and extracting with a volatile solvent, such as ether. This will resolve any salicylates, benzoates, or para-hydroxy benzoates into their respective acids.

Under certain conditions, para-hydroxy benzoic acid couples with solutions of benzene diazonium salts to give a dark, red-brown mixture of mono-, bis- and tris-azophenols. These substances, which result from decarboxylation of the para-hydroxy acid and subsequent coupling, are insoluble in solutions of alkali carbonates, whilst the product obtained by coupling salicylic acid with diazonium salts is readily soluble.

The diazo solution is prepared by dissolving 5 grams of aniline in a mixture of 13 ml of concentrated hydrochloric acid and 26 ml of water. This solution is cooled to 5° C, and to it is added a solution of sodium nitrite (4.5 grams in 20 ml of water), the mixture being slowly shaken until the presence of free nitrous acid is indicated by starch iodide paper. The solution is kept below 5° C and used within one hour. In order to detect para-hydroxy benzoic acid alone, a small quantity is dissolved in a little sodium hydroxide solution and cooled to 5° C. An excess of the diazo solution is slowly added, and after standing for a short time the mixture is acidified and extracted with ether. If the ethereal solution is then shaken with a little sodium hydroxide solution, a deep red color develops in the ether and the alkali remains practically colorless.

For a mixture containing the para- acid and salicylic acid, the same procedure for coupling is adopted, and the resulting solution is acidified and extracted with ether. The ethereal extract is then shaken with sodium carbonate solution, which removes all the salicylic acid derivative and leaves the para- acid derivative in the ether. The ethereal solution may then be tested with sodium hydroxide and the presence of the para- acid confirmed.

C-278—PARA-HYDROXY BENZOATES, DETECTION OF IN THE PRESENCE OF SALICYLATES & BENZOATES

(F. W. Edwards, H. R. Nanji & M. K. Hassan, The Analyst **62**, *178-185, 1937)*

The pure acid is isolated from the mixture after saponification, neutralization and extraction with either alcohol or ether. The acid then is changed to an ammonium salt and kept neutral. Seven tests are used to detect para-hydroxy benzoic acid derivatives, four of which are described here.

TABLE 29

TESTS	PARA-ACID	SALICYLIC ACID	BENZOIC ACID
I. Millon	Rose-red color	Orange-red color	No color
II. Ferric Chloride	No color	Violet color	No color
III. Jorissen	Yellowish color	Pink color	No color
IV. Copper Crystals	Characteristic Crystals	No crystals	....

TABLE 30

TESTS	RESULT	INFERENCE	REMARKS
I. Millon	No red color	Salicylic and p-acids absent	Omit tests II, III, and IV
	Red color	Salicylic and/or para-acid present	Apply tests II, III, and IV
II. Ferric Chloride	Violet color	(a) Salicylic acid present	
		(b) P-acid may also be present	Confirm by test III
	No violet color	(a) P-acid alone may be present	In either case confirm by test IV
		(b) Salicylic acid absent	Omit test III
III. Jorissen	Pink color	Confirms presence of Salicylic acid	
IV. Copper Salt	Characteristic crystalline ppt.	Confirms presence of para-acid	
	No crystals within para-acid absent 12 hours		

Test With Millon's Reagent

Add 2 cc of Millon's reagent to 20 cc of the neutral solution containing the ammonium salt of salicylic, benzoic or para-hydroxy benzoic acids. Heat the mixture in a boiling water bath for two minutes. If a red color develops, it proves the presence of salicylic and para-hydroxy benzoic acid; benzoic acid gives no color.

Preparation of Millon's Reagent: Dissolve one part by weight of mercury in twice its weight of concentrated nitric acid, with gentle warming. When solution has taken place, dilute with twice its volume of water. Use the fresh reagent

whenever possible since it is more sensitive and gives a deeper shade.

FERRIC CHLORIDE TEST

To 50 cc of the solution containing the ammonium salts of benzoic, salicylic and para-hydroxy benzoic acids, add 1 cc of ferric chloride solution. Benzoic acid gives no color; 15 mg of para-hydroxy benzoic acid gives a faint violet color similar to that obtained with 0.1 mg of salicylic acid.

Ferric Chloride Solution: Dissolve 0.1 gm anhydrous ferric chloride in 20 cc normal hydrochloric acid; dilute to 100 cc with distilled water; this solution gives a clear violet color with salicylic acid, eliminating the interference of para-hydroxy benzoic acid.

JORISSEN'S TEST

Take 10 to 25 cc of the solution of ammonium salts, add 1 cc of each of the reagents (i) (ii) and heat the mixture in a boiling water bath for fifteen minutes, cool and dilute to 50 cc. Match the red color produced by adding standard color solution from a burette to a blank consisting of 50 cc of water and 1 cc of reagent (ii).

Reagent (i): 2 percent solution of sodium nitrite. *Reagent (ii):* A solution of 0.3 percent copper sulfate crystals in 10 percent acetic acid. *Standard Color Solution:* Take 5 cc of 0.1 percent salicylic acid solution, dilute to 40 cc, add 5 cc of each reagent (i) and (ii), then dilute to 100 cc; 1 cc of this standard color solution is equivalent to 0.05 mg of salicylic acid.

Benzoic acid gives no color. It does confirm the presence of salicylic acid. A strong positive Millon test and a negative Jorissen test prove the absence of salicylic acid indicating the presence of para-hydroxy benzoic acid.

COPPER SALT CRYSTALS

The copper salt of para-hydroxy benzoic acid is quite insoluble in water and crystallizes out while copper salicylate is very soluble. Evaporate an aliquot part of the neutral ammonium salt solution containing not less than 2 mg and preferably 5 mg of para-hydroxy benzoic acid with 1 cc of 2 percent copper sulfate solution on a water bath to about 1 or 2 cc and cool. The crystals formed are long and needle-like and very distinctive. If salicylic acid is present, it takes considerably more time for the copper para-hydroxy benzoate to crystallize out. Within twelve hours, no para-hydroxy benzoate may be inferred.

C-279—PECTIN AND d-GALACTURONIC ACID, REACTION FOR—EHRLICH

(*Merck Index*)

d-Galacturonic acid, a product of the hydrolytic decomposition of pectin, gives a white flocculent precipitate with a lead subacetate solution. The precipitate is soluble in excess of the reagent. The resulting solution when heated in boiling water becomes turbid and pink in a few seconds. The pink color of the turbidity changes to a deep red, and after about 1 minute a dark blood-red precipitate separates, the supernatant liquid becoming colorless or yellowish.

C-280—PECTIN

(*N.F.*)

Heat 1 gm of pectin with 9 cc of water on a water bath until a solution is formed, replacing water lost by evaporation. It yields a stiff gel upon cooling.

An aqueous solution of pectin (1 in 100) yields a translucent gelatinous precipitate when treated with an equal volume of alcohol (difference from most gums).

To 10 cc of an aqueous solution of pectin (1 in 100) add 1 cc of thorium nitrate T.S., stir, and allow to stand for two minutes; a stable precipitate or gel forms (difference from gums).

To 5 cc of an aqueous solution of pectin (1 in 100) add 1 cc of a solution of potassium hydroxide (1 in 50) and allow to stand at room temperature for 15 minutes: a transparent gel or semi-gel forms (difference from tragacanth).

Acidify the gel from the preceding test with diluted hydrochloric acid and shake well: a voluminous, colorless, gelatinous precipitate forms, which upon boiling becomes white and flocculent (pectic acid). See also, Gums C-189.

C-281—PERBORATE

(*J. R. N. van Kregten, Chem. Weedblad* **32,** *317, 1935*)

In Kingzett's iodometric method for the determination of perborate in soap powder, the period of 5 minutes allowed for the interaction between acidified perborate and potassium iodine is insufficient. A few drops of a 3 percent of ammonium molybdate solution may be added to catalyze the reaction. This makes immediate titration possible.

C-282—PEPPERMINT OIL, REACTION FOR—DAVID

(*Merck Index*)

Warm 1 drop of the oil with 5 drops of vanillin HCl solution for a few seconds on the steam bath, then remove and allow to stand. The acid becomes brownish-red and the oil distinctly lilac-red. If an inferior quality of oil is present, the acid becomes dirty brownish, while the oil is colored a pale violet-blue.

C-283—PEPPERMINT OIL AND MENTHOL, TEST FOR DIFFERENTIATING—DURIESE

(*Merck Index*)

An alcoholic solution of peppermint oil decolorizes iodine tincture after some time, while menthol solution does not.

C-284—PERFUME, DETERMINATION OF, IN COSMETICS

(*L. Storz. Fette u. Seifen* **46,** *685-6, 1939*)

The methods describe separating the perfume from any large proportions of nonvolatile ingredients of the product by steam distillation and then use $(NH_4)_2SO_4$ to ensure quantitative separation of the perfume from the resulting condensate. (Thru *C. A.* **34,** *8179-80, 1940.*)

C-285—PEROXIDE

(*U.S.P.*)

Solutions of peroxides slightly acidulated with sulfuric acid yield deep blue color upon the addition of potassium dichromate T.S. On shaking the mixture with an equal volume of ether and allowing the liquids to separate, the blue color will be found in the superimposed ethereal layer.

C-286—PETROLATUM

(*U.S.P.*)

Petrolatum is insoluble in water. It is almost insoluble in cold or hot alcohol and in cold dehydrated alcohol. It

is freely soluble in benzene, in carbon disulfide, in chloroform, and in oil of turpentine. It is soluble in ether, in purified benzin, and in most fixed and volatile oils, the degree of solubility in these solvents varying with the composition of the petrolatum.

The specific gravity of petrolatum is not less than 0.815 and not more than 0.865 at 60° C.

Petrolatum melts between 38° and 60° C, Class III (P-83).

Ash—Heat 2 gm of petrolatum in an open porcelain or platinum dish over a Bunsen flame; it volatilizes without emitting an acrid odor, and on incineration leaves not more than 0.05 percent of ash.

Organic Acids—Weigh 20 gm of petrolatum, add 100 cc of a mixture of neutralized alcohol and distilled water (1 in 2), agitate thoroughly and heat to boiling. Add 1 cc of phenolphthalein T.S., and titrate rapidly with tenth normal sodium hydroxide with vigorous agitation, to a sharp pink end point, noting the color change in the alcohol-water layer: not more than 0.4 cc of tenth normal sodium hydroxide is required.

Alkali—Introduce 35 gm of petrolatum into a 250 cc separatory funnel, add 100 cc of boiling distilled water, and shake vigorously for 5 minutes. After the petrolatum and water have separated, draw off the water into a casserole, and wash the petrolatum in the separatory funnel with two 50 cc portions of boiling distilled water, and add the washings to the casserole. To the accumulated 200 cc of water add 1 drop of phenolphthalein T.S., and boil: the solution does not acquire a pink color.

Mineral Acids—If the addition of phenolphthalein in the test for alkali produces no pink color add 0.1 cc of methyl orange T.S.: no red or pink color is produced.

Fixed Oils, Fats or Rosin—Digest 10 gm of petrolatum at 100° C with 10 gm of sodium hydroxide and 50 cc of distilled water for 30 minutes, then separate the aqueous layer, and add an excess of diluted sulfuric acid: no oily or solid matter separates.

C-287—LIQUID PETROLATUM

(*U.S.P.*)

White Mineral Oil.

Carbonizable Substances—Place 5 cc of liquid petrolatum in a glass stoppered test tube which has been previously rinsed with chromic acid cleansing mixture, then rinsed with distilled water, and dried. Add 5 cc of sulfuric acid containing from 94.5 percent to 94.9 percent of H_2SO_4, and heat in a boiling water bath for 10 minutes. After the test tube has been in the bath for 30 seconds, remove it quickly, hold with finger over the stopper, and give three vigorous, vertical shakes over an amplitude of about 5 inches. Repeat every 30 seconds. Do not keep test tube out of bath longer than 3 seconds for each shaking period. At the end of 10 minutes from the time when first placed in the water bath, remove the test tube; the liquid petrolatum remains unchanged in color and the acid does not become darker than the standard color produced by mixing in a similar test tube 3 cc of ferric chloride C.S., 1.5 cc of cobaltous chloride T.S., and 0.5 cc of cupric sulfate C.S., this mixture being overlaid with 5 cc of liquid petrolatum.

Reaction—Boil 10 cc of liquid petrolatum with an equal volume of neutralized alcohol: the alcohol remains neutral to moistened litmus paper.

Solid Paraffin—Fill a tall, cylindrical, standard oil sample bottle of colorless glass of about 120 cc capacity with liquid petrolatum, which has been dried previously in a beaker at 100 ° C for 2 hours and cooled to room temperature in a desiccator over sulfuric acid. Stopper, and immerse the bottle in a mixture of ice and distilled water for 4 hours: the liquid petrolatum is sufficiently clear that a black line 0.5 mm in width, held vertically behind the bottle, is easily seen.

Sulfur Compounds—Prepare a saturated solution of lead monoxide in an aqueous solution of sodium hydroxide (1 in 5) and mix 2 drops of the clear solution with 4 cc of liquid petrolatum and 2 cc of dehydrated alcohol: the mixture does not darken after heating at 70° C for 10 minutes and cooling.

C-288—PETROLATUM, TEST FOR IN LANOLIN—TELLERA

(*Merck Index*)

Dissolve 1 gm of the lanolin in 15 cc ether with the aid of heat, allow to cool, filter off the precipitated stearin and add 5 cc absolute alcohol to the filtrate. A flocculent precipitate indicates the presence of petrolatum. In the presence of 3-4 percent petrolatum a precipitate forms immediately; with 1-2 percent petrolatum the precipitate develops after half an hour. Pure lanolin remains clear; a slight turbidity may be due to the presence of stearin.

(*Chapter IV continues in subsequent issue.*)

(Copyright 1945 American Perfumer & Essential Oil Review)